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Vol. I

TRANSCRIPT OF RECORD

Supreme Court of the United States

OCTOBER TERM, 1932

No. 20

EARLE & STODDART, INC., ET AL., OWNERS OF CARGO ON STEAMSHIP "GALILEO", PETITIONERS,

vs.

ELLERMAN'S WILSON LINE, LTD., OWNER OF STEAMSHIP "GALILEO"

ON WRIT OF CERTIORARI TO THE UNITED STATES CIRCUIT COURT OF APPEALS FOR THE SECOND CIRCUIT

PETITION FOR CERTIORARI FILED MARCH 15, 1932

CERTIORARI GRANTED APRIL 18, 1932

(36,623)

(36,623)

SUPREME COURT OF THE UNITED STATES

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ON WRIT OF CERTIORARI TO THE UNITED STATES CIRCUIT COURT OF APPEALS FOR THE SECOND CIRCUIT

VOL. I

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JUDD & DETWEILER (INC.), PRINTERS, WASHINGTON, D. C., MAY 12, 1932

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Libellants' exhibits:	Original	Print
1—Photoprint of lower deck of "Galileo" between the No. 2 and No. 3 hatches looking forward, marked in evidence at folio 281	659	525
2—Photoprint, same as Exhibit 1 except that the view is toward the starboard side, marked in evidence at folio 285	660	526
3—Photoprint, same as Exhibit 1 except that the view is looking aft on the port side forward, marked in evidence at folio 287	661	527
4—Photoprint, same as Exhibit 1 but showing the compartment containing the sill piece, marked in evidence at folio 289	662	528
5—Photoprint, same as Exhibit 1 but showing the compartment with the caked coal and grease, marked in evidence at folio 290	663	529
6—Photoprint, looking down into the vessel thru the No. 2 hatch, marked in evidence at folio 292	664	530
7—Photoprint, view of the upper between deck compartment between No. 2 and No. 3 hatches, looking aft, marked in evidence at folio 293	665	531
8—Photoprint of the caked coal and grease in the No. 3 lower between deck, marked in evidence at folio 295	666	532
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9c—Photoprint, view of the after deck taken from the stern, marked in evidence at folio 296	670	536
9d—Photoprint, view of the engine and boiler room casings on vessel, marked in evidence at folio 296	671	537
9e—Photoprint, view of the after deck looking aft, marked in evidence at folio 296	672	538
9f—Photoprint, view of one of the holds looking down into the hatchway, marked in evidence at folio 296	673	539

	Original	Print
Libellants' exhibits:		
10—Photoprint of a sketch of the arrangement of the between decks of the steamship "Galileo", marked in evidence at 301	674	540
11—Photoprint, sketch, marked in evidence at folio 305	675	541
12—Photoprint, sketch of the deck plan of the lower between decks and shows the locations of the No. 2 hatch, No. 3 hatch, the grain feeder, wooden bulkhead, the ventilators and the passageways, marked in evidence at folios 306 and 321	676	542
13—Photoprint, sketch showing where the coal and cargo was, marked in evidence at folio 323	677	543
14—Letter, dated August 20th, 1927, and photoprints, three sheets, report, marked for identification at folio 360.	678	544
15—Radio messages, marked in evidence at folio 369	683	547
16—Report made by the chief engineer surveyor for Lloyds' Register of British and Foreign Shipping, on Spontaneous Combustion of Coal, dated London, May, 1912, only pages 16 and 17 of pamphlet printed, remainder omitted pursuant to stipulation, marked in evidence at folio 374	684	548
17—Official instruction issued by British Board of Trade, dated December, 1922, only pages 1, 2, and 3 up to paragraph 6 are printed, remainder omitted pursuant to stipulation, marked in evidence at folio 375	689	551
18—Photoprint of plan of the steamship "Galileo", marked in evidence at folio 412	693	554
19—Pamphlet, called "Fires in Steamship Bunkers and Cargo Coal", issued 1923, omitted pursuant to stipulation, marked in evidence at folio 597	694	
20—Stipulation of facts, marked in evidence at folio 827	694	555
21—Photoprint, sketch showing the position of the two pieces of wood which formed the slot, marked in evidence at folio 930	697	557

	Original	Print
Libellants' exhibits:		
22—Photoprint, bill of lading covering the shipment of 8 pieces of plates, signed by W. J. Chatfield, marked in evidence at folio 1299	698	558
23—Photoprint of invoice of the United States Steel Products Company, covering 8 pieces of steel, marked in evidence at folio 1300	699	559
24—Photoprint, stowage plan, marked in evidence at folio 1358	700	560
25—Photoprint, sketch, marked in evidence at folio 1434	701	561
26—Lloyd's Calendar, 1926, Fires in Bunkers and Coal Cargoes, Risks of Spontaneous Combustion, pages 267-269, remainder omitted pursuant to stipulation, marked in evidence at folio 1448	702	562
27—Photoprint of sketch, marked in evidence at folio 1534	707	566
28—Pamphlet by O. P. Hood on Factors in Spontaneous Combustion of Coal, 1922, omitted pursuant to stipulation, marked for identification at folio 1602 and marked in evidence at folio 1613	708	567
29—Printed herein at page 724 as Respondent's Exhibit 29	708	567
30—Photoprint, sketch, marked in evidence at folio 1920	709	568
Respondent's exhibits:		
A—Photoprints of mate's log book of "Galileo" covering period May 15, 1926, to August 22, 1926; page containing August 19 to August 22 photoprinted, remainder omitted pursuant to stipulation, marked in evidence at folios 878 and 976	710	569
B—Photoprints, log book, marked in evidence at folios 889 and 977	711	570
C—Photoprint, cablegram, dated June 23, 1926, marked in evidence at folio 1004	712	571
D—Photoprint, cablegram, dated August 20, 1926, marked in evidence at folio 1018	713	572
E—Photoprint, memorandum bearing Oxtoby's handwriting, marked in evidence at folio 1143	714	573
F—Photoprint of report, marked in evidence at folio 1159	715	574

	Original	Print
Respondent's exhibits:		
G—Photoprint, copy of letter delivered November, 1925, marked in evidence at folio 1184	716	575
H—Affidavit of Oxtoby re Magarelli story, omitted pursuant to stipulation, marked for identification at folio 1241	717	576
I—Photoprint, copy of voyage for June voyage, marked in evidence at folio 1284	718	576
J—Manifest of "Galileo" cargo for June, 1926, voyage, omitted pursuant to stipulation, marked in evidence at folio 1286	719	577
K—Photoprint of copy of agent's report for voyage 107, marked in evidence at folio 1289	720	577
L—Manifest for August voyage, omitted pursuant to stipulation, marked in evidence at folio 1291	721	578
M—Photoprint of certificate, marked in evidence at folio 1485	722	578
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IN UNITED STATES DISTRICT COURT, SOUTHERN DISTRICT OF NEW YORK

A96—206

EARLE & STODDART, INC., et al., Libellants,

against

ELLERMAN'S WILSON LINE, LTD., Owner and Operator of the Steamship "Galileo", Respondent

DOCKET ENTRIES

August 24, 1927.—Filed libel and stipulation for costs.

August 25, 1927.—Filed notice of appearance and stipulation for costs.

September 7, 1927.—Filed exceptions to interrogatories.

September 10, 1927.—Filed note of issue (motion of exceptions to interrogatories, Ret. 9/20/27).

September 30, 1927.—Filed Answer.

October 1, 1927.—Filed note of issue and notice of trial (November).

October 7, 1927.—Notice of motion on exceptions to interrogatories. Exceptions overruled. Winslow, J.

October 7, 1927.—Filed order overruling exceptions to interrogatories. Respondent to answer within 15 days. Winslow, J.

November 15, 1927.—Filed answers to libellant's interrogatories.

[fol. 2] October 25, 1928.—Filed order amending libel by striking out names of libellants: Anderson & Mishkin, Ltd., William S. Gray & Co., Herbert Smart & Co., Ltd., Barter Trading Co., Ltd., Henry Heide, Inc., British Merchants, Inc., Ltd., D. L. Sterling & Sons, Inc., John Travers & Son, Ltd., Bray Gibb & Co., Ltd., Robins Conveying Belt Co., Fraser & Chalmers Engineering Works, International Combustion, Ltd., Eugene Donzelot & Son, F. W. Berk & Co. Ltd., Haines Coote & Co., Henry W. Peabody; subparagraphs 133 to 150 of the first article and items 229 to 246, inclusive, of Exhibit S, and the damages demanded be reduced to $650,000.00. Mack, J.

May 20, 1929.—Order entered substituting Kirklin, Campbell, Hickox, Keating & McCrann.

November 6, 1929.—Frank J. Coleman, J. Case tried. Libellants, three witnesses and 18 exhibits. Respondent. Adjourned to November 7, 1929.

November 7, 1929.—Frank J. Coleman, J. Trial resumed. Libellants, three witnesses and 1 exhibit. Claimant. Adjourned to November 8, 1929.

November 8, 1929.—Frank J. Coleman, J. Trial resumed. Libellants, two exhibits. Respondent, two witnesses and 4 exhibits. Adjourned to November 11, 1929.

November 11, 1929.—Frank J. Coleman, J. Trial resumed. Libellants, 5 exhibits. Respondent, 5 witnesses and 8 exhibits. Adjourned to November 12, 1929.

November 12, 1929.—Frank J. Coleman, J. Trial resumed. Libellants, 3 exhibits. Respondent, 7 witnesses, 1 exhibit and 1 dep. Adjourned to November 13, 1929.

November 13, 1929.—Frank J. Coleman, J. Trial re-
[fol. 3] sumed. Libellants, 1 witness and 2 exhibits. Respondent. Decision reserved.

March 29, 1930—Filed stipulation providing for additional proof.

August 19, 1930—Filed opinion No. 6031. Decree for respondent. Coleman, J.

August 20, 1930.—Filed Vols. 1 and 2. Stenographer's minutes.

August 26, 1930—Filed bill of taxed costs.

October 1, 1930—Decree dismissing libel with costs as taxed at $748.05. Coleman, J.

December 24, 1930.—Filed notice and order allowing appeal.

December 24, 1930—Filed assignments of error.

December 24, 1930—Filed order extending time to file record on appeal to February 26, 1931, Woolsey, J.

December 29, 1930—Filed bond for costs on appeal.

February 26, 1931—Filed order extending term of court to March 30, 1931, etc., Bondy, J.

March 30, 1931—Filed order extending term of court to April 30, 1931, etc., Bondy, J.

April 28, 1931—Filed order extending term of court to June 1, 1931, Clerk.

May 29, 1931—Filed order extending term of court to July 1, 1931, Clerk.

[fol. 4] IN UNITED STATES DISTRICT COURT

LIBEL

To the Honorable the Judges of the United States District Court for the Southern District of New York:

The libel and complaint of Earle & Stoddart, Inc., Earle, Stoddart & Clayton, Ltd., E. Capelcure & Co., Ltd., Strauss & Co., Ltd., Micks, Lambert & Co., John Doe Micks, Richard Roe Lambert, John Doe and Richard Roe, Co-partners, trading under the name and style of Micks, Lambert & Co., Sanday & Co., Inc., Henry Leetham & Sons, Limited, Sanday & Co., Limited, W. S. Williamson & Co., W. S. Williamson, John Doe and Richard Roe, Co-partners, trading under the name and style of W. S. Williamson & Co., Kingan & Company, Kingan & Co., Ltd., Schuckl & Company, Inc., Co-Operative Wholesale Society, Ltd., Pelling, Stanley & Co., Ltd., A. E. Staley Mfg. Co., H. Lionel Tydeman & Co., H. Lionel Tydeman, John Doe and Richard Roe, co-partners, trading under the name and style of H. Lionel Tydeman & Co., A. E. Chew, Stuebing Truck Company, W. P. Notcutt, Limited, R. E. Dietz Company, E. & F. Turnbull, Ltd., Certain-Teed Products Corporation, B. L. Roberts, F. E. Booth Co., Inc., United Sales Organizations, Ltd., The New Jersey Zinc Sales Co., Inc., Morris Ashby, Limited, Republican Mining & Metal Co., Ltd., The Cookson Lead & Antimony Co., Ltd., James Hewitt & Co., Ltd., United States Steel Products Company, Ruston & Hornsby, Limited, California Packing Corporation, R. & W. Davidson, Limited, J. V. Faber & Co., Ltd., Metcalfe's Stores, Ltd., Broughs, Ltd., Thomas Bell & Son, Ltd., Bueman & Riley Bros., Ltd., W. P. Tanner-Gross & Company, Inc., Watson & Philip, Ltd., Wilson D. Lyon, Loren M. Cowdrey [fol. 5] and A. Gordon Wilson, co-partners, trading under the name and style of Lyon, Cowdrey & Wilson, Angus Watson & Co., Ltd., Hawaiian Canneries Co., Ltd., The Haserot Company, Harry Hall & Co., Inc., Meredith Brothers & Co., Ltd., Simpson, Roberts & Co., Ltd., Acheson Graphite Company, Cromil Engineering Co., Ltd., T. M. Sinclair & Co., Ltd., W. P. Sinclair & Co. Ltd., Bemis Bros. Bag Company, Joseph Rank, Ltd., Griffith-Durney Company, Morris & Jones, Limited, Walker Canning Com-

pany, Armour & Company, Ltd., Pillsbury Flour Mills Company, Edward Rathbone & Son, Edward Rathbone, John Doe Rathbone, Richard Roe Rathbone, John Doe and Richart Roe, co-partners, trading under the name and style of Edward Rathbone & Sons, American Chain Company, Inc., Joh. Olafsson & Co., Joh. Olafsson, John Doe and Richard Roe, co-partners, trading under the name and style of Joh. Olafsson & Co., Tide Water Oil Company, Armour & Company, North American Provision Company, Morris & Co., Ltd., A. V. Berner & Company, Inc., James Arnott & Sons, Ltd. James B. Berry Sons Company, Inc., Consolidated Dairy Products Co., Roberts & Schaefer Company, Hugh Wood & Co., Ltd., Goodall Clayton & Co., Ltd., L. Sonneborn Sons, Inc., Waverly Oil Works Co., Jacob Dold Packing Company, The Leavit Machine Co., Caldwell & Company, Inc., Langstaff Erembert & Co., Ltd., The Barber Asphalt Company, Walter M. Field & Company, Walter M. Field, John Doe and Richard Roe, co-partners, trading under the name and style of Walter M. Field & Company, A. M. Landauer, B. Landauer, W. T. Hammond and D. J. Saunders, co-partners, trading under the name and style of Landauer & Company, Bay Side Canning Co., Starr [fol. 6] Fruit Products Company, Gabriel Nachman, Inc., Jebb Bros., Ltd., George F. Smith & Son, Limited, Strathmore Paper Company, California Co-Operative Canneries, M. B. Jones & Co., Inc., Cargo Superintendents, Ltd., Grain Union, Ltd., Reynolds, Stott & Haslegrave, Ltd., Keighley, Maxsted & Company, John Doe Keighley, Richard Roe Keighley, John Doe Maxsted, Richard Roe Maxsted, John Doe and Richard Roe, co-partners, trading under the name and style of Keighly, Maxsted & Company, Canadian Co-Operative Wheat Producers, Ltd., A. Zerega's Sons, Consolidated, Continental Produce Company, Ltd., Federated Metals Corporation, The Felling Zinc Oxide Co., Ltd., Yeskel Supply Co., Inc., Soeteman Freres, John Doe Soeteman, Richard Roe Soeteman, John Doe and Richard Roe, co-partners, trading under the name and style of Soeteman Freres, S. Henle, Inc., Bartoline (Hull), Ltd., Thomas-Body Company, Inc., Morris & Co. (Meat Importers), Ltd., Pitt & Scott, Inc., Bureau of American Mfgrs. in Europe, Ltd., Arthur I. Rackliff, H. J. Heinz Co., H. J. Heinz Company, Ltd., J. Stevens Arms Company, High

Rock Knitting Company, A. T. Singer, Wilson & Co., Inc., Wilson & Co., Inc., Melady Grain Co., Inc., Spear & Thorpe, John Doe Spear, Richard Roe Thorpe, John Doe and Richare Roe, co-partners, trading under the name and style of Spear & Thorpe, O. M. Earle Co., Inc., Humber Fruit Brokers, Ltd., E. I. du Pont de Nemours & Company, Inc., Kynoch, Ltd., Vickers, Ltd., Nobel Industries, Ltd., Anderson & Mishkin, Ltd., William S. Gray & Co., Herbert Smart & Co., Ltd., Barter Trading Co., Ltd., Henry Heide, Inc., British Merchants, Inc., Ltd., D. L. Sterling and Sons, [fol. 7] Inc., John Trauers & Son, Ltd., Bray Gibb & Co., Ltd., Robins Conveying Belt Co., Fraser & Chalmers Engineering Works, International Combustion, Ltd., Eugene Donzelot & Son, John Doe Donzelot, Richard Roe Donzelot, John Doe and Richard Roe, co-partners, trading under the name and style of Eugene Donzelot & Son, F. W. Berk & Co., Ltd., Haines Coote & Co., John Doe Haines, Richard Roe Coote, John Doe and Richard Roe, co-partners, trading under the name and style of Haines Coote & Co., and Henry W. Peabody & Co. against Ellerman's Wilson Line, Limited, owner and operator of the Steamship "Galileo", in a cause of contract and cargo damage, civil and maritime, alleges and respectfully shows to this Honorable Court as follows:

First. At all the times hereinafter mentioned your libellants were, and they now are, individuals, corporations or copartnerships as follows:

1. Earle & Stoddart, Inc., a corporation duly organized and existing under and by virtue of the laws of the State of New York, with an office and place of business at 8 Bridge Street, Borough of Manhattan, City, State and Southern District of New York.

2 Earle, Stoddart & Clayton, Ltd., a corporation duly created, organized and existing under and by virtue of the laws of the United Kingdom of Great Britain and Ireland, with an office and place of business in the City of London, England.

3. E. Capel-Cure & Co., Ltd., a corporation duly created, organized and existing under and by virtue of the laws of [fol. 8] the United Kingdom of Great Britan and Ireland,

with an office and place of business in the City of Liverpool, England.

4. Strauss & Co., Ltd., a corporation duly created, organized and existing under and by virtue of the laws of the United Kingdom of Great Britain and Ireland, with an office and place of business in the City of London, England.

5. Micks Lambert & Co., a corporation duly created, organized and existing under and by virtue of the laws of the United Kingdom of Great Britain and Ireland, with an office and place of business in the City of Hull, England.

6. John Doe Micks, Richard Roe Lambert, John Doe and Richard Roe, copartners, trading under the firm name and style of Micks Lambert & Company, with an office and place of business in the City of Hull, England.

7. Sanday & Co., Inc., a corporation duly organized and existing under and by virtue of the laws of the State of New York, with an office and place of business at the Produce Exchange, Borough of Manhattan, City, State and Southern District of New York.

8. Henry Leetham & Sons, Limited, a corporation duly created, organized and existing under and by virtue of the laws of the United Kingdom of Great Britain and Ireland, with an office and place of business in Yorkshire, England.

9. Sanday & Co., Limited, a corporation duly created, organized and existing under and by virtue of the laws of the [fol. 9] United Kingdom of Great Britain and Ireland, with an office and place of business in the City of London, England.

10. W. S. Williamson & Co., a corporation duly created, organized and existing under and by virtue of the laws of the United Kingdom of Great Britain and Ireland, with an office and place of business in the City of London, England.

11. W. S. Williamson, John Doe and Richard Roe, copartners, trading under the firm name and style of W. S. Williamson & Co., with an office and place of business in the City of London, England.

12. Kingan & Company, a corporation duly organized and existing under and by virtue of the laws of the State

of Indiana, with an office and place of business in the City of Indianapolis, Indiana.

13. Kingan & Co., Limited, a corporation, duly created, organized and existing under and by virtue of the laws of the United Kingdom of Great Britain and Ireland, with an office and place of business in the City of Belfast, Ireland.

14. Schuckl & Company, Inc., a corporation duly organized and existing under and by virtue of the laws of the State of California, with an office and place of business in the City of San Francisco, California.

15. Co-Operative Wholesale Society, Ltd., a corporation duly created, organized and existing under and by virtue of the laws of the United Kingdom of Great Britain and Ireland, with an office and place of business in the City of Manchester, England.

[fol. 10] 16. Pelling, Stanley & Co., Ltd., a corporation duly created, organized and existing under and by virtue of the laws of the United Kingdom of Great Britain and Ireland, with an office and place of business in the City of Liverpool, England.

17. A. E. Staley Mfg. Co., a corporation duly organized and existing under and by virtue of the laws of the State of Illinois, with an office and place of business in the City of Decatur, Illinois.

18. H. Lionel Tydeman & Co., a corporation duly created, organized and existing under and by virtue of the laws of the United Kingdom of Great Britain and Ireland, with an office and place of business in the City of London, England.

19. H. Lionel Tydeman, John Doe and Richard Roe, copartners, trading under the firm name and style of H. Lionel Tydeman & Co., with an office and place of business in the City of London, England.

20. A. E. Chew, a resident of New York, with an office and place of business at 17 Battery Place, Borough of Manhattan, City, State and Southern District of New York.

21. Stuebing Truck Company, a corporation duly organized and existing under the laws of the State of Ohio, with an office and place of business in the City of Cincinnati, Ohio.

22. W. P. Notcutt, Limited, a corporation duly created, organized and existing under and by virtue of the laws of the United Kingdom of Great Britain and Ireland, with an office and place of business in the City of London, England.

[fol. 11] 23. R. E. Dietz Company, a corporation duly organized and existing under and by virtue of the laws of the State of New York, with an office and place of business at 60 Laight Street, Borough of Manhattan, City, State and Southern District of New York.

24. E. & F. Turnbull, Ltd., a corporation duly created, organized and existing under and by virtue of the laws of the United Kingdom of Great Britain and Ireland, with an office and place of business in the City of Newcastle, England.

25. Certain-Teed Products Corporation, a corporation duly organized and existing under and by virtue of the laws of the State of Maryland, with an office and place of business at 100 East 42nd Street, Borough of Manhattan, City, State and Southern District of New York.

26. B. L. Roberts, a resident of Newcastle, England, with an office and place of business in the City of Newcastle, England.

27. F. E. Booth Co., Inc., a corporation duly organized and existing under and by virtue of the laws of the State of California, with an office and place of business at 19 Hudson Street, Borough of Manhattan, City, State and Southern District of New York.

28. United Sales Organizations, Ltd., a corporation duly created, organized and existing under and by virtue of the laws of the United Kingdom of Great Britain and Ireland, with an office in the City of London, England.

[fol. 12] 29. The New Jersey Zinc Sales Co., Inc., a corporation duly organized and existing under and by virtue of the laws of the State of New Jersey, with an office and place of business at 160 Front Street, Borough of Manhattan, City, State and Southern District of New York.

30. Morris Ashby, Limited, a corporation duly created, organized and existing under and by virtue of the laws of

the United Kingdom of Great Britain and Ireland, with an office and place of business in the City of London, England.

31. Republican Mining & Metal Co., Ltd., a corporation duly created, organized and existing under and by virtue of the laws of the United Kingdom of Great Britain and Ireland, with an office and place of business in the City of Newcastle, England.

32. The Cookson Lead & Antimony Co., Ltd., a corporation duly created, organized and existing under and by virtue of the laws of the United Kingdom of Great Britain and Ireland, with an office and place of business in the City of Newcastle, England.

33. James Hewitt & Co., Ltd., a corporation duly created, organized and existing under and by virtue of the laws of the United Kingdom of Great Britain and Ireland, with an office and place of business in the City of London, England.

34. United States Steel Products Company, a corporation duly organized and existing under and by virtue of the laws of the State of New Jersey, with an office and place of [fol. 13] business at 30 Church Street, Borough of Manhattan, City, State and Southern District of New York.

35. Ruston & Hornsby, Limited, a corporation duly created, organized and existing under and by virtue of the laws of the United Kingdom of Great Britain and Ireland, with an office in the City of Lincoln, England.

36. California Packing Corporation, a corporation duly organized and existing under and by virtue of the laws of the State of California, with an office and place of business at 90 Broadway, Borough of Manhattan, City, State and Southern District of New York.

37. R. & W. Davidson, Limited, a corporation duly created, organized and existing under and by virtue of the laws of the United Kingdom of Great Britain and Ireland, with an office and place of business in the City of Glasgow, Scotland.

38. J. V. Faber & Co., Ltd., a corporation duly created, organized and existing under and by virtue of the laws of the United Kingdom of Great Britain and Ireland, with an

office and place of business in the City of Newcastle, England.

39. Metcalfe's Stores, Ltd., a corporation duly created, organized and existing under and by virtue of the laws of the United Kingdom of Great Britain and Ireland, with an office and place of business in the City of Newcastle, England.

40. Broughs, Ltd., a corporation duly created, organized and existing under and by virtue of the laws of the United [fol. 14] Kingdom of Great Britain and Ireland, with an office and place of business in the City of Newcastle, England.

41. Thomas Bell & Son, Ltd., a corporation duly created, organized and existing under and by virtue of the laws of the United Kingdom of Great Britain and Ireland, with an office and place of business in the City of Newcastle, England.

42. Buemann & Riley Bros., Ltd., a corporation duly created, organized and existing under and by virtue of the laws of the United Kingdom of Great Britain and Ireland, with an office and place of business in the City of Newcastle, England.

43. W. P. Tanner-Gross & Company, Inc., a corporation duly organized and existing under and by virtue of the laws of the State of New York, with an office and place of business at 25 Beaver Street, Borough of Manhattan, City, State and Southern District of New York.

44. Watson & Philip, Ltd., a corporation duly created, organized and existing under and by virtue of the laws of the United Kingdom of Great Britain and Ireland, with an office and place of business in the City of Dundee, Scotland.

45. Wilson D. Lyon, Loren M. Cowdrey and A. Gordon Wilson, copartners, trading under the firm name and style of Lyon, Cowdrey & Wilson, with an office and place of business at 17 Battery Place, Borough of Manhattan, City, State and Southern District of New York.

[fol. 15] 46. Angus Watson & Co., Ltd., a corporation duly created, organized and existing under and by virtue of the laws of the United Kingdom of Great Britain and

Ireland, with an office and place of business in the City of Newcastle, England.

47. Hawaiian Canneries Co., Ltd., a corporation duly organized and existing under and by virtue of the laws of the Territory of Hawaii with an office and place of business in the City of Ahukini, T. H.

48. The Haserot Company, a corporation duly organized and existing under and by virtue of the laws of the State of Ohio, with an office and place of business in the City of Cleveland, Ohio.

49. Harry Hall & Co., Inc., a corporation duly organized and existing under and by virtue of the laws of the State of California, with an office and place of business in the City of San Francisco, California.

50. Meredith Brothers & Co., Ltd., a corporation duly created, organized and existing under and by virtue of the laws of the United Kingdom of Great Britain and Ireland, with an office and place of business in the City of Liverpool, England.

51. Simpson, Roberts & Co., Ltd., a corporation duly created, organized and existing under and by virtue of the laws of the United Kingdom of Great Britain and Ireland, with an office and place of business in the City of Liverpool, England.

[fol. 16] 52. Acheson Graphite Company, a corporation duly organized and existing under and by virtue of the laws of the State of New York, with an office and place of business at 33 West 42nd Street, Borough of Manhattan, City, State and Southern District of New York.

53. Cromil Engineering Co., Ltd., a corporation duly created, organized and existing under and by virtue of the laws of the United Kingdom of Great Britain and Ireland, with an office and place of business in the City of Newcastle, England.

54. T. M. Sinclair & Co., Ltd., a corporation duly organized and existing under and by virtue of the laws of the State of Iowa, with an office and place of business in the City of Cedar Rapids, Iowa.

55. W. P. Sinclair & Co., Ltd., a corporation duly created, organized and existing under and by virtue of the laws of the United Kingdom of Great Britain and Ireland, with an office and place of business in the City of Liverpool, England.

56. Bemis Bros. Bag Company, a corporation duly organized and existing under and by virtue of the laws of the State of Delaware, with an office and place of business at 2nd Avenue and 51st Street, Borough of Brooklyn, City, State and Eastern District of New York.

57. Joseph Rank, Ltd., a corporation duly organized and existing under and by virtue of the laws of the United Kingdom of Great Britain and Ireland, with an office and [fol. 17] place of business in the City of Hull, England.

58. Griffith-Durhey Company, a corporation duly organized and existing under and by virtue of the laws of the State of California, with an office and place of business in the City of San Francisco, California.

59. Morris & Jones, Limited, a corporation duly created, organized and existing under and by virtue of the laws of the United Kingdom of Great Britain and Ireland, with an office and place of business in the City of Liverpool, England.

60. Walker Canning Company, a corporation duly organized and existing under and by virtue of the laws of the State of Oregon, with an office and place of business in the City of Independence, Oregon.

61. Armour & Company, Ltd., a corporation duly created, organized and existing under and by virtue of the laws of the United Kingdom of Great Britain and Ireland, with an office and place of business in the City of London, England.

62. Pillsbury Flour Mills Company, a corporation duly organized and existing under and by virtue of the laws of the State of Minnesota, with an office and place of business in the Produce Exchange, Borough of Manhattan, City, State and Southern District of New York.

63. Edward Rathbone & Son, a corporation duly created, organized and existing under and by virtue of the laws of [fol. 18] the United Kingdom of Great Britain and Ireland,

with an office and place of business in the City of London, England.

64. Edward Rathbone, John Doe Rathbone, Richard Roe Rathbone, John Doe and Richard Roe, co-partners, trading under the firm name and style of Edward Rathbone & Son, with an office and place of business in the City of London, England.

65. American Chain Company, Inc., a corporation duly organized and existing under and by virtue of the laws of the State of Connecticut, with an office and place of business in the City of Bridgeport, Connecticut.

66. Joh. Olafsson & Co., a corporation duly created, organized and existing under and by virtue of the laws of the Kingdom of Denmark, with an office and place of business in the City of Reykjavik, Iceland.

67. Joh. Olafsson, John Doe and Richard Roe, co-partners, trading under the firm name and style of Joh. Olafsson & Co., with an office and place of business in the City of Reykjavik, Iceland.

68. Tidewater Oil Company, a corporation duly organized and existing under and by virtue of the laws of the State of New Jersey, with an office and place of business at 11 Broadway, Borough of Manhattan, City, State and Southern District of New York.

69. Armour & Company, a corporation duly organized and existing under and by virtue of the laws of the State of [fol. 19] Illinois, with an office and place of business at 120 Broadway, Borough of Manhattan, City, State and Southern District of New York.

70. North American Provision Company, a corporation duly organized and existing under and by virtue of the laws of the State of Illinois, with an office and place of business at 120 Broadway, Borough of Manhattan, City, State and Southern District of New York.

71. Morris & Co., Ltd., a corporation duly created, organized and existing under and by virtue of the laws of the United Kingdom of Great Britain and Ireland, with an office and place of business in the City of Liverpool, England.

72. A. V. Berner & Company, Inc., a corporation duly organized and existing under and by virtue of the laws of the State of New York, with an office and place of business at No. 15 Whitehall Street, Borough of Manhattan, City, State and Southern District of New York.

73. James Arnott & Sons, Ltd., a corporation duly created, organized and existing under and by virtue of the laws of the United Kingdom of Great Britain and Ireland, with an office and place of business in the City of Newcastle, England.

74. James B. Berry Sons Company, Inc., a corporation duly organized and existing under and by virtue of the laws [fol. 20] of the State of Pennsylvania, with an office and place of business in Oil City, Pennsylvania.

75. Consolidated Dairy Products Co., a corporation duly organized and existing under and by virtue of the laws of the State of Washington, with an office and place of business in the City of Seattle, Washington.

76. Roberts & Schaefer Company, a corporation duly organized and existing under and by virtue of the laws of the State of Illinois, with an office and place of business in the City of Chicago, Illinois.

77. Hugh Wood & Co., Ltd., a corporation duly created, organized and existing under and by virtue of the laws of the United Kingdom of Great Britain and Ireland, with an office and place of business in the City of Newcastle, England.

78. Goodall Clayton & Co., Ltd., a corporation duly created, organized and existing under and by virtue of the laws of the United Kingdom of Great Britain and Ireland, with an office and place of business in the City of Newcastle, England.

79. L. Sonneborn Sons, Inc., a corporation duly organized and existing under and by virtue of the laws of the State of Delaware, with an office and place of business at 114 Fifth Avenue, Borough of Manhattan, City, State and Southern District of New York.

80. Waverly Oil Works Co., a corporation duly organized and existing under and by virtue of the laws of the

[fol. 21] State of Pennsylvania, with an office and place of business at 30 Church Street, Borough of Manhattan, City, State and Southern District of New York.

81. Jacob Dold Packing Company, a corporation duly organized and existing under and by virtue of the laws of the State of New York, with an office and place of business at 433 West 14th Street, Borough of Manhattan, City, State and Southern District of New York.

82. The Leavitt Machine Co., a corporation duly organized and existing under and by virtue of the laws of the State of Massachusetts, with an office and place of business in the City of Orange, Massachusetts.

83. Caldwell & Company, Inc., a corporation duly organized and existing under and by virtue of the laws of the State of New York, with an office and place of business at 50 Broad Street, Borough of Manhattan, City, State and Southern District of New York.

84. Langstaff Erembert & Co., Ltd., a corporation duly created, organized and existing under and by virtue of the laws of the United Kingdom of Great Britain and Ireland, with an office and place of business in the City of Liverpool, England.

85. The Barber Asphalt Company, a corporation duly organized and existing under and by virtue of the laws of the State of Pennsylvania, with an office and place of business at 233 Broadway, Borough of Manhattan, City, State and Southern District of New York.

[fol. 22] 86. Walter M. Field & Company, a corporation duly organized and existing under and by virtue of the laws of the State of California, with an office and place of business in the City of San Francisco, California.

87. Walter M. Field, John Doe and Richard Roe, co-partners, trading under the firm name and style of Walter M. Field & Company, with an office and place of business in the City of San Francisco, California.

88. A. M. Landauer, B. Landauer, W. T. Hammond and D. J. Saunders, co-partners, trading under the firm name and style of Landauer & Company, with an office and place of business in the City of London, England.

89. Bay Side Canning Co., a corporation duly organized and existing under and by virtue of the laws of the State of California, with an office and place of business in the City of Alviso, California.

90. Starr Fruit Products Company, a corporation duly organized and existing under and by virtue of the laws of the State of Oregon, with an office and place of business in the City of Portland, Oregon.

91. Gabriel Nachman, Inc., a corporation duly organized and existing under and by virtue of the laws of the State of New York, with an office and place of business at 209 Sullivan Street, Borough of Manhattan, City, State and Southern District of New York.

[fol. 23] 92. Jebb Bros. Ltd., a corporation duly created, organized and existing under and by virtue of the laws of the United Kingdom of Great Britain and Ireland, with an office and place of business in the City of Newcastle, England.

93. George F. Smith & Son, Limited, a corporation duly created, organized and existing under and by virtue of the laws of the United Kingdom of Great Britain and Ireland, with an office and place of business in the City of Hull, England.

94. Strathmore Paper Company, a corporation duly organized and existing under and by virtue of the laws of the State of Massachusetts, with an office and place of business in the City of Woronoco, Massachusetts.

95. California Co-Operative Canneries, a corporation duly organized and existing under and by virtue of the laws of the State of California, with an office and place of business in the City of San Francisco, California.

96. M. B. Jones & Co., Inc., a corporation duly organized and existing under and by virtue of the laws of the State of New York, with an office and place of business at 2 Broadway, Borough of Manhattan, City, State and Southern District of New York.

97. Cargo Superintendents Ltd., a corporation duly created, organized and existing under and by virtue of the laws of the United Kingdom of Great Britain and Ireland

with an office and place of business in the City of Hull, England.

[fol. 24] 98. Grain Union Ltd., a corporation duly created, organized and existing under and by virtue of the laws of the United Kingdom of Great Britain and Ireland, with an office and place of business in the City of London, England.

99. Reynolds, Stott & Haslegrave, Ltd., a corporation duly created, organized and existing under and by virtue of the laws of the United Kingdom of Great Britain and Ireland, with an office and place of business in the City of Wakefield, England.

100. Keighley, Maxsted & Company, a corporation duly created, organized and existing under and by virtue of the laws of the United Kingdom of Great Britain and Ireland, with an office and place of business in the City of Hull, England.

101. John Doe Keighley, Richard Roe Keighley, John Doe Maxsted, Richard Roe Maxsted, John Doe and Richard Roe, copartners, trading under the firm name and style of Keighley, Maxsted & Company, with an office and place of business in the City of Hull, England.

102. Canadian Co-Operative Wheat Producers, Ltd., a corporation duly created, organized and existing under and by virtue of the laws of the Dominion of Canada, with an office and place of business in the City of Winnipeg, Canada.

103. A. Zerega's Sons, Consolidated, a corporation duly organized and existing under and by virtue of the laws of the State of New York, with an office and place of business [fol. 25] at 28 Front Street, Borough of Manhattan, City, State and Southern District of New York.

104. Continental Produce Company, Ltd., a corporation duly created, organized and existing under and by virtue of the laws of the United Kingdom of Great Britain and Ireland, with an office and place of business in the City of London, England.

105. Federated Metals Corporation, duly organized and existing under and by virtue of the laws of the State of Delaware, with an office and place of business at 233 Broadway, Borough of Manhattan, City, State and Southern District of New York.

106. The Felling Zinc Oxide Co., Ltd., a corporation duly created, organized and existing under and by virtue of the laws of the United Kingdom of Great Britain and Ireland, with an office and place of business at Felling-on-Tyne, England.

107. Yeskel Supply Co., Inc., a corporation duly organized and existing under and by virtue of the laws of the State of New York, with an office and place of business at 29 Broadway, Borough of Manhattan, City, State and Southern District of New York.

108. Soeteman Freres, a corporation duly created, organized and existing under and by virtue of the laws of the Kingdom of Belgium, with an office and place of business in the City of Antwerp, Belgium.

109. John Doe Soeteman, Richard Roe Soeteman, John Doe and Richard Roe, co-partners, trading under the firm [fol. 26] name and style of Soeteman Freres, with an office and place of business in the City of Antwerp, Belgium.

110. S. Henle, Inc., a corporation duly organized and existing under and by virtue of the laws of the State of New York, with an office and place of business at 8 Bridge Street, Borough of Manhattan, City, State and Southern District of New York.

111. Bartoline (Hull) Ltd., a corporation duly created, organized and existing under and by virtue of the laws of the United Kingdom of Great Britain and Ireland, with an office and place of business in the City of Hull, England.

112. Thomas-Body Company, Inc., a corporation duly organized and existing under and by virtue of the laws of the State of California, with an office and place of business in the City of Oakland, California.

113. Morris & Co. (Meat Importers) Ltd., a corporation duly created, organized and existing under and by virtue of

the laws of the United Kingdom of Great Britain and Ireland, with an office and place of business in the City of Newcastle, England.

114. Pitt & Scott, Inc., a corporation duly organized and existing under and by virtue of the laws of the State of New York, with an office and place of business at 55 Front Street, Borough of Manhattan, City, State and Southern District of New York.

[fol. 27] 115. Bureau of American Mfgrs. in Europe, Ltd., a corporation duly created, organized and existing under and by virtue of the laws of the United Kingdom of Great Britain and Ireland, with an office and place of business in the City of London, England.

116. Arthur I. Rackliff, a resident of the State of Maine, with an office and place of business in the City of Farmington, Maine.

117. H. J. Heinz Co., a corporation duly organized and existing under and by virtue of the laws of the State of Pennsylvania, with an office and place of business in the City of Pittsburgh, Pennsylvania.

118. H. J. Heinz Company, Ltd., a corporation duly created, organized and existing under and by virtue of the laws of the United Kingdom of Great Britain and Ireland, with an office and place of business in the City of London, England.

119. J. Stevens Arms Company, a corporation duly organized and existing under and by virtue of the laws of the State of Massachusetts, with an office and place of business at 100 East 42nd Street, Borough of Manhattan, City, State and Southern District of New York.

120. High Rock Knitting Company, a corporation duly organized and existing under and by virtue of the laws of the State of New York, with an office and place of business at 93 Worth Street, Borough of Manhattan, City, State and Southern District of New York.

[fol. 28] 121. A. T. Singer, a resident of Newcastle, England, with an office and place of business in the City of Newcastle, England.

122. Wilson & Co., Inc., a corporation duly organized and existing under and by virtue of the laws of the State of Kansas, with an office and place of business in Kansas City, Kansas.

123. Wilson & Co., Inc., a corporation duly organized and existing under and by virtue of the laws of the State of Illinois, with an office and place of business in the City of Chicago, Illinois.

124. Melady Grain Co., Inc., a corporation duly organized and existing under and by virtue of the laws of the State of New York, with an office and place of business in the Produce Exchange, Borough of Manhattan, City, State and Southern District of New York.

125. Spear & Thorpe, a corporation duly created, organized and existing under and by virtue of the laws of the United Kingdom of Great Britain and Ireland, with an office and place of business in the City of Hull, England.

126. John Doe Spear, Richard Roe Thorpe, John Doe and Richard Roe, copartners, trading under the firm name and style of Spear & Thorpe, with an office and place of business in the City of Hull, England.

127. O. M. Earle Co., Inc., a corporation duly organized and existing under and by virtue of the laws of the State of New York, with an office and place of business at 207 Duane Street, Borough of Manhattan, City, State and [fol. 29] Southern District of New York.

128. Humber Fruit Brokers, Ltd., a corporation duly created, organized and existing under and by virtue of the laws of the United Kingdom of Great Britain and Ireland, with an office and place of business in the City of Hull, England.

129. E. I. du Pont de Nemours & Company, Inc., a corporation duly organized and existing under and by virtue of the laws of the State of Delaware, with an office and place of business at 17 Battery Place, Borough of Manhattan, City, State and Southern District of New York.

130. Kynoch, Ltd., a corporation duly created, organized and existing under and by virtue of the laws of the United

Kingdom of Great Britain and Ireland, with an office and place of business in the City of Birmingham, England.

131. Vickers, Ltd., a corporation duly created, organized and existing under and by virtue of the laws of the United Kingdom of Great Britain and Ireland, with an office and place of business in the City of London, England.

132. Nobel Industries, Ltd., a corporation duly created, organized and existing under and by virtue of the laws of the United Kingdom of Great Britain and Ireland, with an office and place of business in the City of London, England.

133. Anderson & Mishkin, Ltd., a corporation duly organized and existing under and by virtue of the laws of the United Kingdom of Great Britain and Ireland, with an [fol. 30] office and place of business in the Colman Building, City of Seattle, Washington.

134. William S. Gary & Co., a corporation duly organized and existing under and by virtue of the laws of the State of New York, with an office and place of business at No. 342 Madison Avenue, Borough of Manhattan, City, State and Southern District of New York.

135. Herbert Smart & Co., Ltd., a corporation duly organized and existing under and by virtue of the laws of the United Kingdom of Great Britain and Ireland, with an office and place of business at Lloyd's House, 6 Lloyd's Avenue, London, England.

136. Barter Trading Co., Ltd., a corporation duly organized and existing under and by virtue of the laws of the United Kingdom of Great Britain and Ireland, with an office and place of business in the Imperial House, 17 Kingsway, London, England.

137. Henry Heide, Inc., a corporation duly organized and existing under and by virtue of the laws of the State of New York, with an office and place of business at No. 313 Hudson Street, Borough of Manhattan, City, State and Southern District of New York.

138. British Merchants, Inc., Ltd., a corporation duly organized and existing under and by virtue of the laws of

the United Kingdom of Great Britain and Ireland, with an [fol. 31] office and place of business at 37 Eastcheap, London, England.

139. D. L. Sterling & Sons, Inc., a corporation duly organized and existing under and by virtue of the laws of the State of New York, with an office and place of business at No. 100 Hudson Street, Borough of Manhattan, City, State and Southern District of New York.

140. John Trauers & Sons, Ltd., a corporation duly organized and existing under and by virtue of the laws of the United Kingdom of Great Britain and Ireland, with an office and place of business at No. 119 Cannon Street, London, England.

141. Bray Gibb & Co., Ltd., a corporation duly organized and existing under and by virtue of the laws of the United Kingdom of Great Britain and Ireland, with an office and place of business at No. 14 Sherborne Lane, London, England.

142. Robins Conveying Belt Co., a corporation duly organized and existing under and by virtue of the laws of the State of New Jersey, with an office and place of business at No. 15 Park Row, Borough of Manhattan, City, State and Southern District of New York.

143. Fraser & Chalmers Engineering Works, a corporation duly organized and existing under and by virtue of the laws of the United Kingdom of Great Britain and Ireland, with an office and place of business in Newcastle, England.

144. International Combustion, Ltd., a corporation duly [fol. 32] organized and existing under and by virtue of the laws of the United Kingdom of Great Britain and Ireland, with an office and place of business in the Africa House, Kingsway, London, England.

145. Eugene Donzelot & Son, a corporation duly organized and existing under and by virtue of the laws of the United Kingdom of Great Britain and Ireland, with an office and place of business at No. 16 South First Street, St. Louis, Missouri.

146. John Doe Donzelot, Richard Roe Donzelot, John Doe and Richard Roe, copartners, trading under the name and

style of Eugene Donzelot & Son, with an office and place of business at No. 16 South First Street, St. Louis, Missouri.

147. F. W. Berk & Co., Ltd., a corporation duly organized and existing under and by virtue of the laws of the United Kingdom of Great Britain and Ireland, with an office and place of business at No. 106 Fenchurch Street, London, England.

148. Haines Coote & Co., a corporation duly organized and existing under and by virtue of the laws of the United Kingdom of Great Britain and Ireland, with an office and place of business at No. 155 Fenchurch Street, London, England.

149. John Doe Haines, Richard Roe Coote, John Doe and Richard Roe, copartners, trading under the firm name and style of Haines Coote & Co., with an office and place of business at No. 155 Fenchurch Street, London, England.

150. Frederick N. Lincoln, John R. Bradlee, Charles E. [fol. 33] Barry, Frederick N. Lincoln, Jr., and Brantz M. Bryan, copartners trading under the firm name and style of Henry W. Peabody & Co., with an office and place of business at No. 17 State Street, Borough of Manhattan, City, State and Southern District of New York.

Second. At all the times hereinafter mentioned, the respondent was, and now is, a corporation duly created, organized and existing under and by virtue of the laws of the United Kingdom of Great Britain and Ireland, owning and operating a number of steam vessels, including those hereinafter mentioned, engaged in the common carriage of cargo on the high seas, having an office and principal place of business in the City of Hull, England; and, at all the times hereinafter mentioned, it was the owner and operator of the steamship "Galileo" which, at all the times hereinafter mentioned, was a general ship engaged in the common carriage of merchandise for hire between, among others, the port of New York and the ports of Hull, Newcastle and Antwerp.

Third. During the month of August, 1926, certain consignments of merchandise set out in the list annexed hereunto, marked Exhibit "S", all in good order and condition, were shipped and placed on board the Steamship

"Galileo" at the port of New York to be carried on the said vessel by the respondent, as a common carrier, to the ports of Hull and/or Newcastle and/or Antwerp and/or to be there transshipped to the destinations designated in the respective bills of lading and to be delivered at said destinations in like good order and condition as when shipped, unto the order of the respective consignees; and [fol. 34] the said respondent then and there agreed to carry the said merchandise on the said vessel to the ports of Hull and/or Newcastle and/or Antwerp and to deliver the said merchandise, in like good order and condition as when shipped, in consideration of certain agreed freight and in accordance with the valid terms of certain bills of lading covering the said shipments, signed and delivered to the respective shippers by the duly authorized agents of the respondent during the months of July and August, 1926. Each of the said bills of lading, with the exception of certain special provisions, viz., date, name of shipper, name of consignee, destination of the merchandise shipped, description of the merchandise shipped, identification marks of the merchandise, notations in reference to freight, and special stamped conditions, was in one of the forms hereto attached as exhibits, viz., bills of lading "A" to "R", inclusive. Photostatic copies of said exhibits, bills of lading "A" to "R", inclusive, are annexed hereto and are hereby made a part of this libel as fully as if they had been set forth at length herein.

Fourth. The forms of the bills of lading, the names of the shippers, the dates, places and/or ports of shipments, the ports and/or places of destination, the merchandise shipped, and the consignees named in the bills of lading were as shown on the list annexed hereunto, made a part hereof and marked Exhibit "S".

Fifth. Thereafter the steamship "Galileo", laden with the cargo aforesaid, sailed from the port of New York, bound for the ports of Hull and/or Newcastle and/or Ant- [fol. 35] werp, but the steamship "Galileo" has failed to deliver the said cargo at said ports of destination, in accordance with the contracts of carriage aforesaid. The steamship "Galileo" delivered a small portion of said merchandise at the port of New York, but not in like good order and condition as when shipped. The merchandise

so delivered was short and seriously damaged. The greater portion of the merchandise described in the Fourth Article of this libel has never been delivered, either at the designated ports of destination or at any other place, and your libellants allege, upon information and belief, that the said merchandise has either become totally lost or has been sold by the respondent and the proceeds retained by it.

Sixth. Prior to the delivery of any of the said merchandise and prior to the commencement of this action, your libellants were and/or became, for value, the owners and holders of the respective bills of lading covering the said merchandise described in Exhibit "S" of this libel, and entitled to the delivery thereof, in accordance with the provisions of the said bills of lading.

Seventh. By reason of the premises, your libellants have sustained damages in the sum of Seven hundred thousand Dollars ($700,000.00), as nearly as the same can now be estimated, no part of which has been paid, although the same has been duly demanded.

Eighth. Your libellants have duly performed all conditions precedent to suit on their part to be performed under the said bills of lading and under the maritime law. The [fol. 36] time within which the libellants might commence suit for non-delivery or damage to the goods covered by said bills of lading was extended by agreement executed by the respondent.

Ninth. All and singular the premises are true and within the Admiralty and Maritime Jurisdiction of the United States and of this Honorable Court.

Wherefore libellants pray that process in due form of law, according to the course and practice of this Honorable Court in causes of Admiralty and Maritime Jurisdiction, may issue against the respondent above named, Ellerman's Wilson Line, Limited, and that the said respondent be cited to appear and answer, on oath, this libel and all and singular the matters aforesaid; and that in the event that the said respondent cannot be found in this District then that the steamships "Francisco", "Gourko", "Guido", "Idaho", "Kyno", "Lepanto" and "Marengo" and moneys, freights, etc., goods, credits and effects due

to said respondent from Ellerman's Wilson Line, New York, Inc., 26 Broadway, Borough of Manhattan, City, State and Southern District of New York, and any other property belonging to the said respondent be attached for the amount set forth; and that this Honorable Court be pleased to decree to your libellants their damages against the said respondent, with interest and costs, and that the said steamships "Francisco", "Gourko", "Guido", "Idaho", "Kyno", "Lepanto" and "Marengo", their engines, boilers, etc., and said other property so attached be condemned and sold to satisfy the same; and that your [fol. 37] libellants may have such other and further relief as in law and justice they may be entitled to receive.

Bigham, Englar & Jones, Proctors for Libellants.
Office & P. O. address: No. 64 Wall Street, Borough of Manhattan, City of New York.

INTERROGATORIES ANNEXED TO THE LIBEL TO BE ANSWERED BY THE RESPONDENT

First Interrogatory. What was the cause of the fire which broke out on the "Galileo"?

Second Interrogatory. (a) Did the fire break out in the bunker coal stowed in No. 3 tween-deck between a temporary wooden bulkhead and the forward fireroom bulkhead?

(b) If not where did the fire break out, and if what substance?

Third Interrogatory. (a) When was each lot of bunker coal in No. 3 tween-deck put on board the "Galileo"?

(b) What are the names and addresses of the persons who supplied and loaded that coal and how much did each supply?

[fol. 38] (c) What kinds of coal were in No. 3 tween-deck and what are their technical and trade designations or classifications?

(d) Where did that coal come from?

(e) Where was each such lot of coal loaded on the "Galileo"?

(f) How was each lot of coal stowed with relation to the other lots of coal in No. 3 tween-deck?

(g) How old was each such lot of coal?

(h) In what enclosures, containers or holds had it been confined after its receipt on board the "Galileo" and for what period of time?

(i) What was the condition of the temporary wooden bulkhead in No. 3 tween-deck as to being watertight?

(j) What kinds and quantities of cargo were stowed in No. 3 tween-deck forward of the temporary wooden bulkhead?

(k) Was lard or other similar substance stowed forward of the temporary wooden bulkhead?

Fourth Interrogatory. (a) What was the extent of the fire on the "Galileo"?

(b) Exactly what parts of the "Galileo" were burned by the fire and to what extent?

(c) What was the nature and extent of the physical dam- [fol. 39] age to her hull structure which the "Galileo" sustained as a direct result of contact with the fire?

Fifth Interrogatory. Where was the "Galileo" when the fire broke out?

Sixth Interrogatory. Produce a copy of the entries in the scrap or rough deck and engine room logbooks of the "Galileo" covering the period of the fire and the examinations and surveys afterwards made to ascertain its cause and extent.

Seventh Interrogatory. What persons first observed the fire and what did they see?

Eighth Interrogatory. What persons were present when the fire broke out?

Ninth Interrogatory. How long did the fire continue?

Tenth Interrogatory. Did officers and men of the New York City Fire Department offer their services in helping to extinguish the fire at about 3 A. M. on August 29th, 1926?

Eleventh Interrogatory. Was the offer of assistance by the New York City Fire Department accepted or refused?

Twelfth Interrogatory. Why was that offer of assistance by the New York City Fire Department refused?

[fol. 40] Thirteenth Interrogatory. (a) Was a Fire Vessel of the Fire Department available at 3 A. M. on August 29, 1926, to assist in extinguishing the fire?

(b) Did those in charge of such fire vessel offer to assist in extinguishing the fire?

(c) Was such offer accepted or refused?

(d) Why was such offer refused?

Fourteenth Interrogatory. (a) Why was no assistance of the Fire Department asked or accepted between 3 A. M. on August 29, 1926, and 6:40 P. M. on August 26, 1927?

(b) Did any shore agent or shore representative of the "Galileo" give any advice or instructions to those on board the "Galileo" in respect to the Fire Department or to the method by which the fire should be extinguished?

Fifteenth Interrogatory. (a) Describe in detail all the communications, either oral or written, which passed between the master or those on the "Galileo" and the owners or shore officers, agents or employees of the "Galileo" after the fire broke out and before it was finally extinguished.

[fol. 41] (b) What was the time when each such communication was made?

(c) Annex to your answer copies of all such communications as were in writing.

(d) What were the names and positions of the persons between whom such communications passed?

Sixteenth Interrogatory. (a) After the fire broke out and before it was extinguished, what communications passed between those on the "Galileo" and any other persons?

(b) Annex copies of all such communications which were in writing.

Seventeenth Interrogatory. (a) What efforts were made to extinguish the fire?

(b) Did any shore agent, representative or employee of the owner of the "Galileo" issue any advice or instructions with reference to extinguishing the fire?

Eighteenth Interrogatory. (a) Was any coal or cargo shifted or moved on the "Galileo" after the fire broke out and before it was finally extinguished; and if so,

(b) What quantities and from what place to what place?

[fol. 42] Nineteenth Interrogatory. (a) After the fire was extinguished was any coal or cargo shifted or moved in or from No. 3 tween-deck, and if so,

(b) Why?

(c) What was then observed?

Twentieth Interrogatory. Why was the damage to the "Galileo" and her cargo not limited and confined to the direct physical damage to her hull, bunker coal and cargo by burning?

Twenty-first Interrogatory. Produce and annex to your answer copies of the protest extended by the master of the "Galileo".

Twenty-second Interrogatory. Produce and annex to your answer copies of all reports regarding the fire on the "Galileo" and the damage to cargo, made to the owners and shore agents of the "Galileo" by her master and officers and by the surveyors employed by the owners and by the owners' underwriters.

Bigham, Englar & Jones, Proctors for Libellant, 64 Wall Street, Borough of Manhattan, City of New York.

[fols. 43 & 44] *Duly sworn to by Gerald F. Earle and T. Catesby Jones. Jurats omitted in printing.*

A Bill of Lading A

CO., INC.

ON BOARD 3/16

ing at the Port of NEW YORK and bound for HULL via Antwerp (with liberty to omit) and
, enter or stay at any other ports or places for any purposes whatsoever, although pertaining to
or offener, backwards or forwards in or out of any order or rotation, and the same to be
before or after sailing or arrival to put the vessel in dry dock for any purpose whatsoever,
liberty to carry goods of all kinds, dangerous or otherwise, and to carry livestock and/or cargo

~~steamer or steamers although prior or subsequent~~

430000 LBS

value unknown, and to be delivered in like good order and condition at the Port of HULL

or to his or their assigns, he or they

credit or discount, at the rate of

feet, as per margin

240 lbs., gross weight delivered.

480 lbs., gross weight delivered.

// //

law and usual vessels in distress, that the carrier shall have liberty to convey goods to
steamer shall put into a port of refuge, or be prevented from any cause from proceeding
that the carrier shall not be liable, as carrier or otherwise, for any loss, damage, delay
ment, discharge, delivery or other disposition of goods, or on board, or in lighters or craft,
throughout this contract always excepted: By perils of the sea or other waters, by dan

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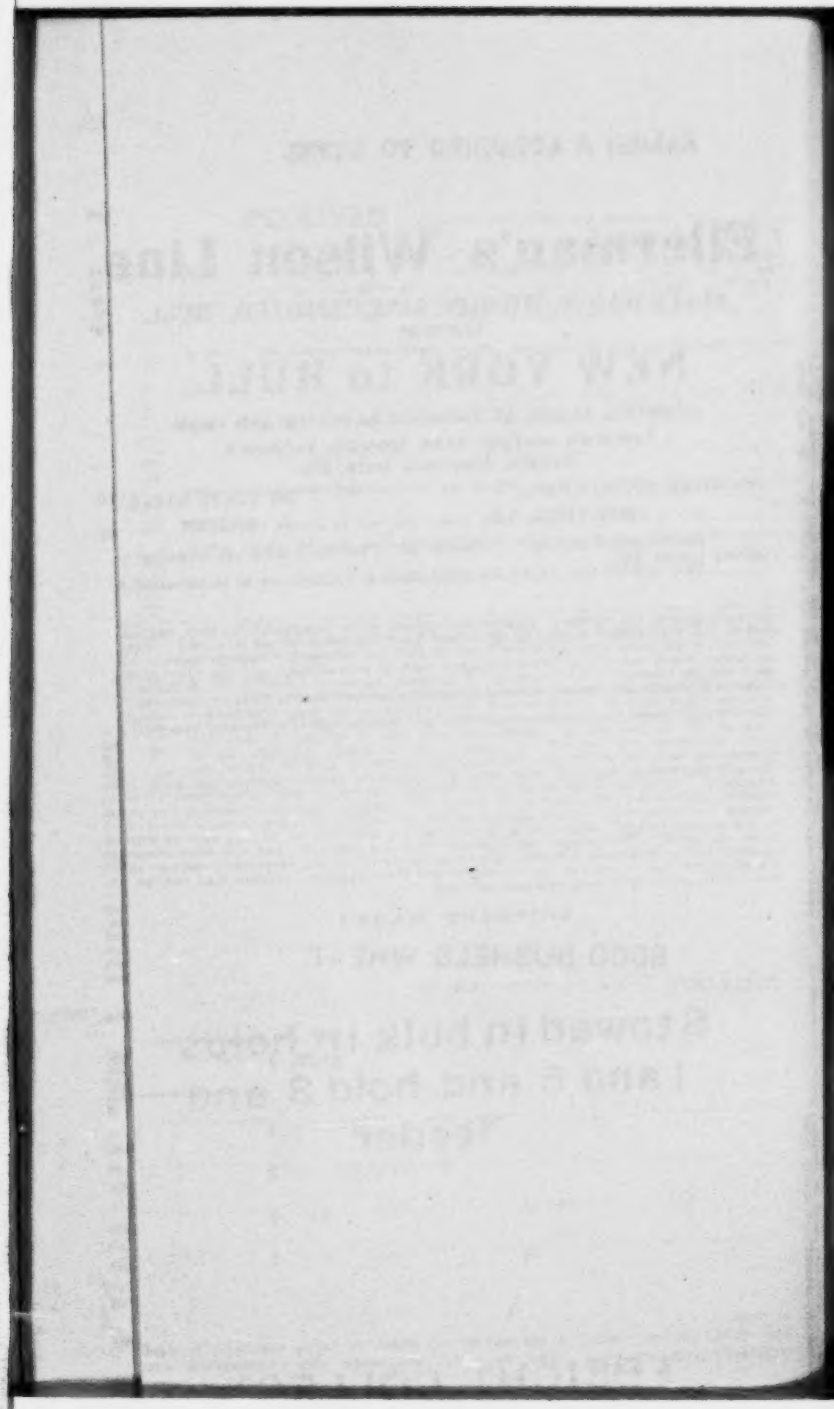

[fol. 45] EXHIBIT A ANNEXED TO LIBEL

Bill of Lading, Dated Aug. 26, 1926

(Photoprint, side folio 45-a)

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[fol. 46] EXHIBIT B ANNEXED TO LIBEL

Bill of Lading, Dated Aug. 21, 1926

(Photoprint, side folio 46-a)

FOLD OUT IS TOO LARGE TO BE FILMED

4. Shippers shall be liable for any loss or damage to vessel or cargo, caused by inflammable, ex[illegible] ped thereunder.
shipper be principal or agent; and such goods so shipped may be thrown overboard or destroyed at any time without compensation. thout full disclosure of their nature, whether
5. The carrier shall have a lien on the goods for all freights and charges and any sums that may be due under this bill of lading, and also for all fines or damages which the vessel
go may incur or suffer by reason of the illegal, incorrect or insufficient marking, numbering or addressing of packages or description of their contents.
6. If the vessel is prevented from reaching her destination by Quarantine, the carrier may discharge the goods into any depot or lazaretto, under suitable available protection,
tching notice thereof to the consignee, if named herein (at destination named), and otherwise to the shipper, and such discharge shall be deemed a final delivery under this con-
, and all the expenses thereby incurred on the goods shall be a lien thereon.
7. The vessel may commence discharging immediately on arrival and discharge continuously, any custom of the port to the contrary notwithstanding, the Collector of the Port
her proper officer being hereby authorised to grant a general order for discharge immediately on arrival, and if the goods be not taken from the vessel by the consignee directly
come to hand in discharging the vessel, the master or vessel's agent to be at liberty to enter and land thegoods, or put them into craft or store at the owner's risk and expense,
tching notice thereof to the consignee, if named herein (at destination named), and otherwise to the shipper, when the goods shall be deemed delivered and vessel's responsibility
d, but the vessel and carrier to have a lien on such goods until the payment of all costs and charges so incurred.
8. If on a sale of the goods at destination for freight and charges, the proceeds fail to cover said freight and charges, the ocean carrier shall be entitled to recover the difference
the shipper, owner, or consignee. Full freight is payable on damaged or unsound goods; but no freight is due on any increase in bulk or weight caused by the absorption of water
ing the voyage. Freight prepaid will not be returned provided the goods have been loaded on the vessel.
9. In the event of claims for short delivery when the vessel reaches her destination, the value shall be adjusted as per conditions under clause 2, less all charges saved, vessel being
onsible only for such part of the goods as has been actually delivered to the vessel at the port (A) above mentioned, and vessel not liable for any loss, or damage that may have
rred before such delivery, while agreeing to present promptly to inland carriers for account of owners of goods any claims for shortage or loss or damage that may have occurred
re delivery of the goods at the port (A) above mentioned.
10. Goods on wharf awaiting shipment or delivery shall not be at ocean carrier's risk of loss or damage and [illegible]

32

[f

47] EXHIBIT C ANNEXED TO LIBEL

Bill of Lading, Dated July 17, 1926

Front & Back

(Photoprint, side folios 47-a and 47-b)

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[fol. 48] EXHIBIT D ANNEXED TO LIBEL

Bill of Lading, Dated September 7, 1926

(Photoprint, side folio 48-a)

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Exhibit D. ATTACHED TO LIBEL

AMERICAN-HAWAIIA

Through to ... NEWCASTLE ... ...

... In case of the Blockade or intended of the port of destination, or if, without such Blockade or intention, the entering of the Port of Discharge should be considered unsafe by reason of War or Hostilities, the Master to have the option of landing the Goods at any other Port which he may consider safe at Shipper's risk and expense; and on the Goods being thereby so landed and a letter being put into the Post Office addressed to the Shipper, and if possible, the Consignee, if known, stating the landing and where deposited, the same to be at the Shipper's risk and expense, and the Company to be discharged from all responsibility.

GENERAL EUROPEAN AGENTS—
BENJN. ACKERLEY & SON.
LIVERPOOL.

P S CO 321 NEWCASTLE	50 Cases Canned Peaches
P S CO 405 NEWCASTLE	100 Cases Canned Peaches

FREIGHT PREPAID STPAPPED

ISSUED IN EXCHANGE FOR B/LADING NO.F.5.
NEWCASTLE - SS ARIZONAN V.16 - DATED
SAN FRANCISCO, 21ST JULY, 1926.
CONSIGNED TO ORDER OF SCHUCKLS CO.INC.
and duly endorsed, and surrendered by
Pelling Stanley & Co.Ltd.

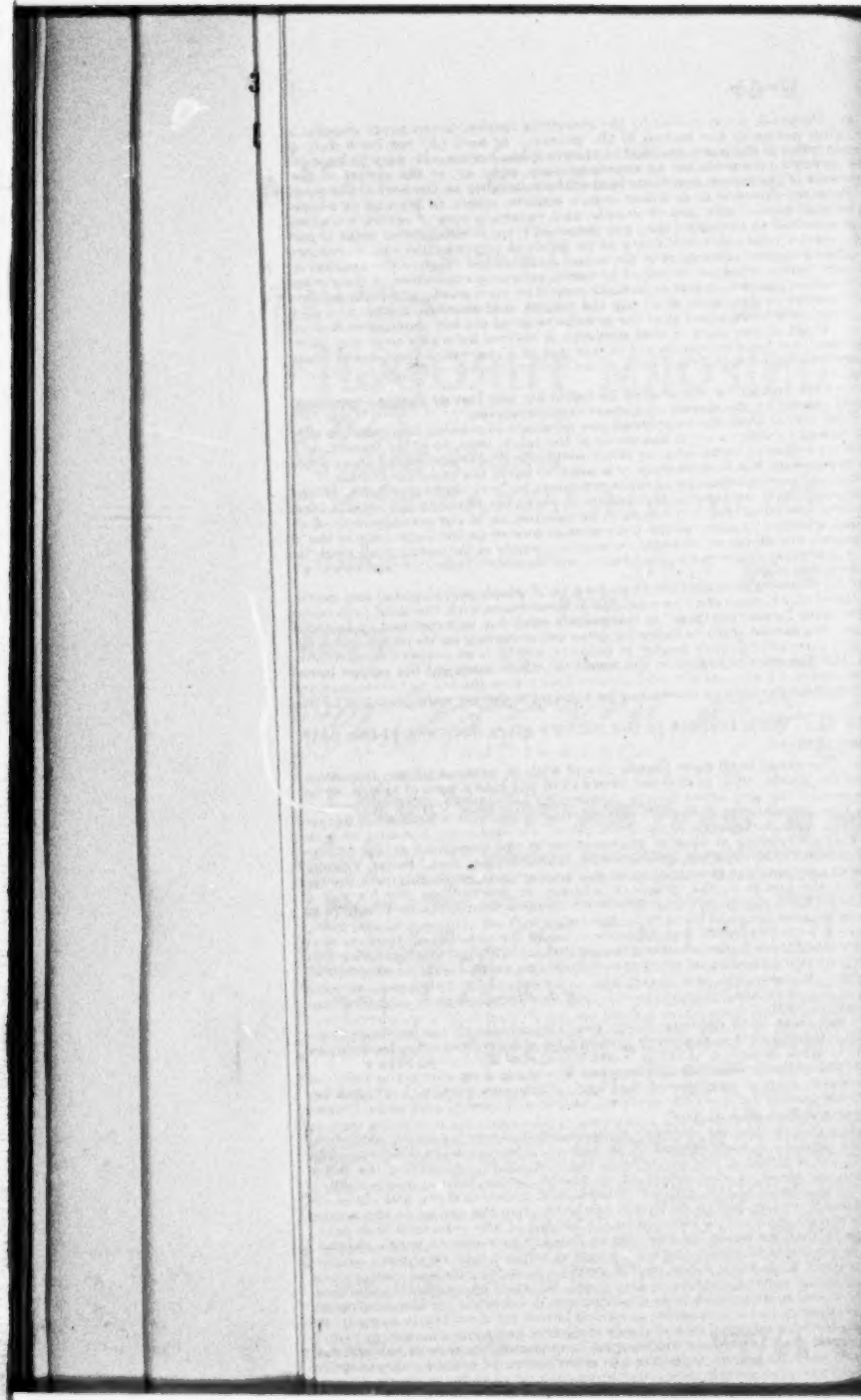

EXHIBIT E ANNEXED TO LIBEL

Bill of Lading, Dated Aug. 16, 1926

Front & Back

(Photoprints, side folios 49-a and 49-b)

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[fol. 50] EXHIBIT F ANNEXED TO LIBEL

Bill of Lading, Dated Aug. 29, 1926

(Photoprint, side folio 50-a)

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F Bill of Lading F

DIETZ COMPANY

now lying at the Port of NEW YORK and bound for NEWCASTLE via Antw. ,(with
to or toward, call, enter or stay at any other ports or places for any purposes whatsoever, al
to destination, once or oftener, backwards or forwards in or out of any order or rotation, a
any time and place before or after sailing or arrival to put the vessel in dry dock for any
deviation; and with liberty to carry goods of all kinds, dangerous or otherwise, and to carry liv
port by any other steamer or steamers although prior or subsequent

GROSS WEIGHT 360 #

F

and value unknown), and to be delivered in like good order and condition at the Por
URNBULL , L.T .

allowance of credit or discount, at the rate of or to his or their a

per 40 cubic feet, as per margin.

per ton of 2240 lbs., gross weight delivered.

per lbs., gross weight delivered.

without pilots; to tow and assist vessels in distress; that the carrier shall have liberty to
and, in case the steamer shall put into a port of refuge, or be prevented from any cause
any other steamer; that the

EXHIBIT G ANNEXED TO LIBEL

Bill of Lading, Dated Aug. 6, 1926

Front & Back

(Photoprints, 51-a and 51-b)

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[fol. 52] EXHIBIT H ANNEXED TO LIBEL

Bill of Lading, Dated June 17, 1926

Front & Back

(Photoprints, 52-a and 52-b)

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H

H. 710

AGENTS:
Castle & Cooke, Ltd.
Honolulu, T. H.
Alexander & Baldwin, Ltd.
Seattle, Wn.
Kahului, T. H.
Port Allen, T. H.
C. [illegible]er & Co., Ltd.
Hilo, T. H.
Matson Navigation Co.
Los Angeles, Cal.

M tson Na

SAN FRANCISCO—SEA
CALL—COLUMBIA

Honolulu Agents
Castle & Cooke, Ltd.

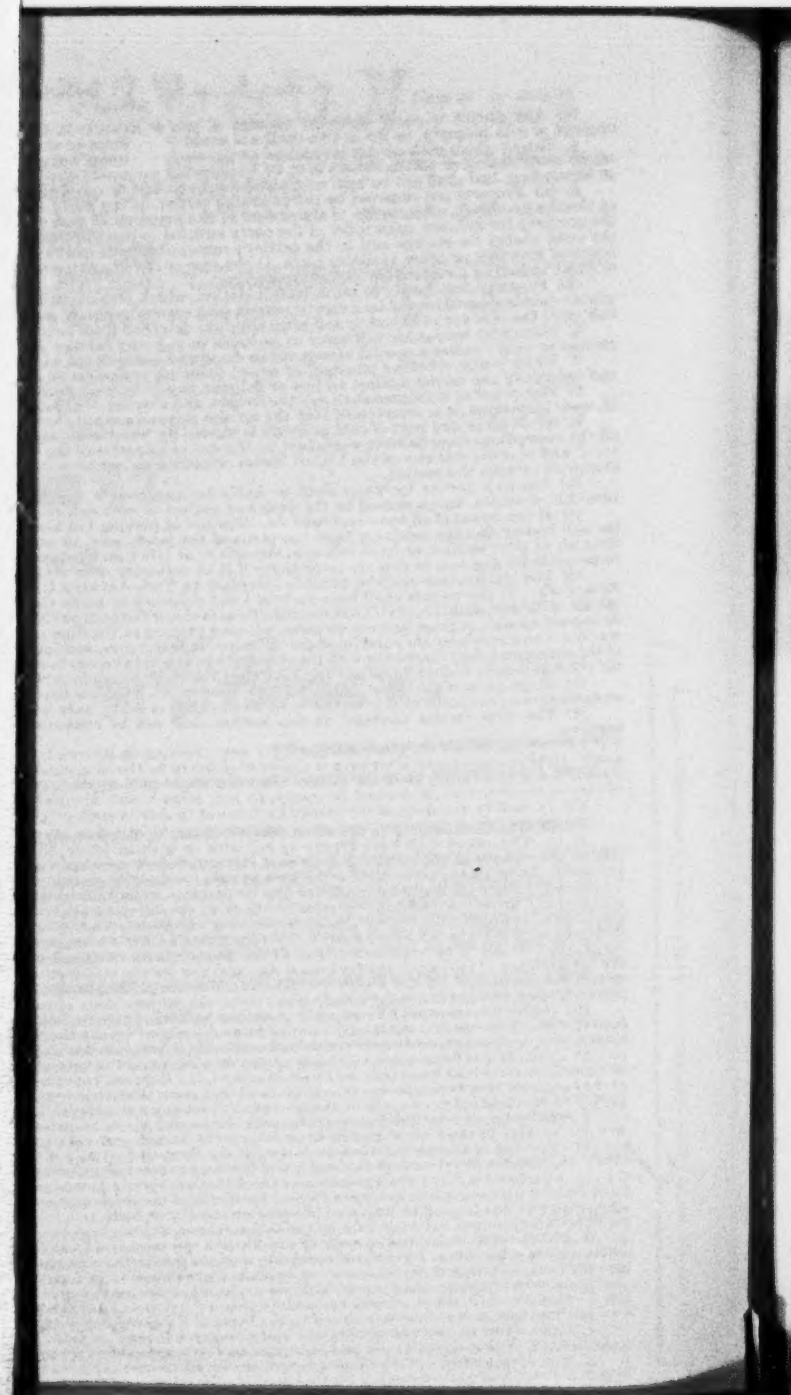
RECEIVED at the port, as dated below, by Matson Navigation Co., he
port on STEAMER named below, or on such other steamer or steamers
and good order, except when otherwise noted—the value, weight, quantity
Carrier—the agent to be so forwarded with such reasonable dispatch as ge
thereto as said navigation of such vessel or vessels shall then permit, and
signee, or if said consignee be not on hand to so receive same or if said
or wharfinger or to any forwarder or other carrier for and instead of said
by Carrier and average shall be due and payable on any such delivery, and
and to secure payment of such charges said packages are hereby pledged to
after it is unloaded from vessel's tackles. Carrier shall have all rights a
and 2196, Civil Code of California, together with the benefit of all laws of

STEAMER: SS "MAKENA" VOY. #29

SHIPPER: HAWAIIAN CANNERIES CO.,LTD.,

CONSIGNED TO: THE HASEROT COMPANY,

MARKS	PKGS.	Kind of Pkg.
196	125 cs.	#2½ C
A.W.		
NEW CASTLE-ON-TYNE		
	CONSIGNED TO:	
	ORDER NOTIFY:	
	For transhipme	



[fol. 53] EXHIBIT I ANNEXED TO LIBEL

Bill of Lading, Dated Aug. 20, 1926

Front & Back

(Photoprints, 53-a and 53-b)

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[fol. 54] EXHIBIT J ANNEXED TO LIBEL

Bill of Lading, Dated Aug. 18, 1926

Front & Back

(Photoprints, 54-a and 54-b)

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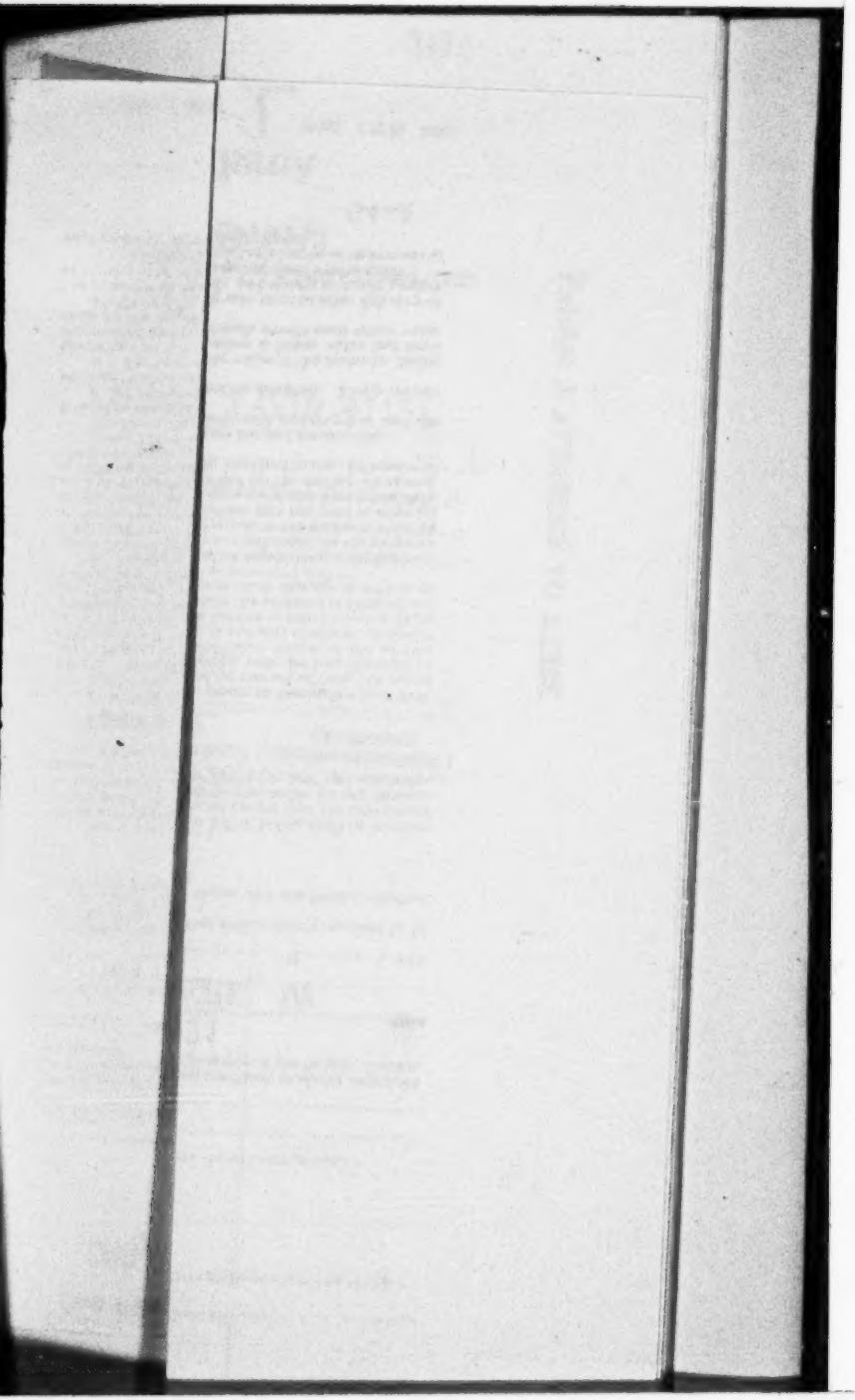

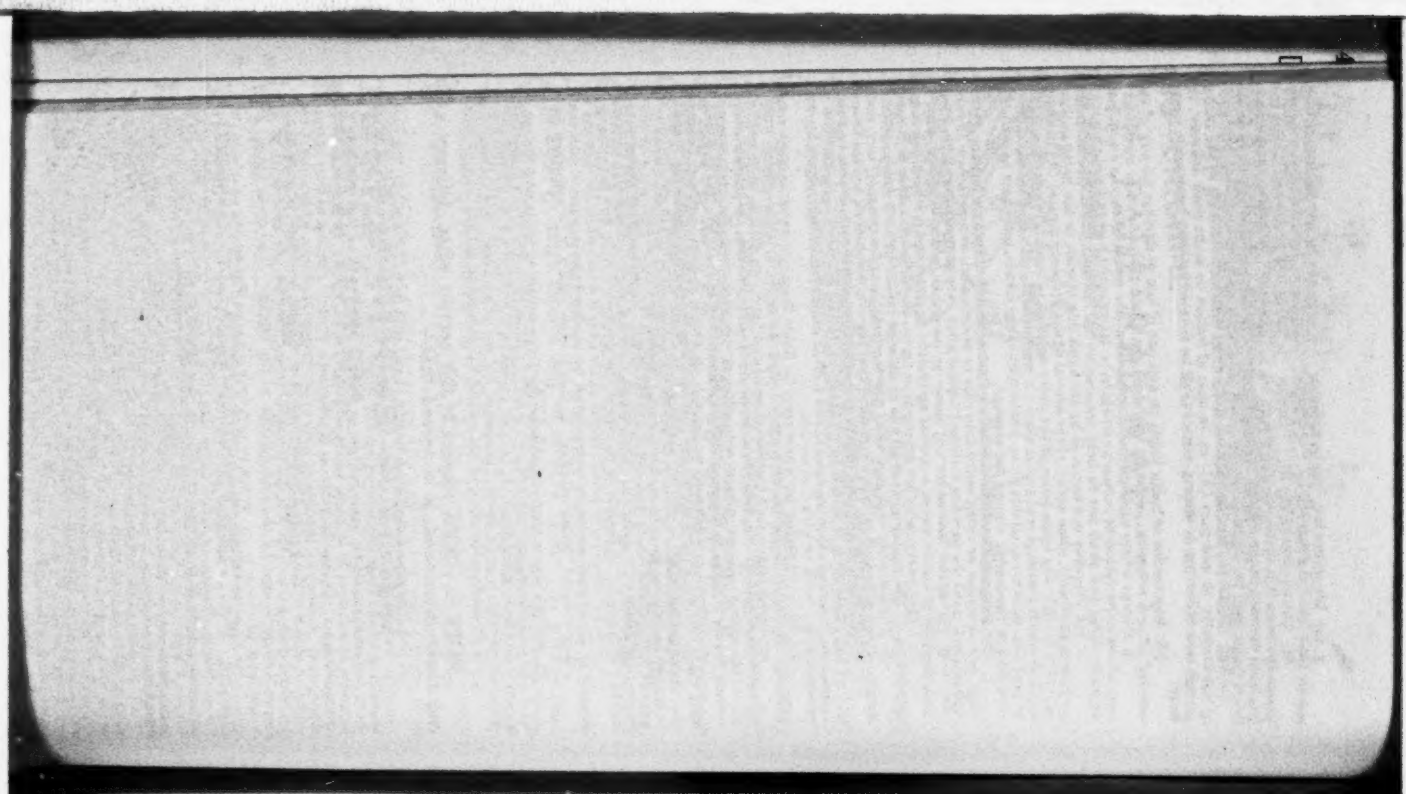

[fol. 55] EXHIBIT K ANNEXED TO LIBEL

Bill of Lading, Dated Aug. 13, 1926

Front & Back

(Photoprints, 55-a and 55-b)

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[fol. 56] EXHIBIT L ANNEXED TO LIBEL

Bill of Lading, Dated Aug. 20, 1926

(Photoprint, 56-a)

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L Bill of Lading L

Form 17-A

UNIFORM THROUGH EXPORT BILL OF LADING

(Prescribed by the Interstate Commerce Commission)

ORDER BILL OF LADING ORIGINAL

THE CHICAGO AND ALTON RAILROAD COMPANY

WILLIAM W. WHEELOCK AND WILLIAM G. BIRD, RECEIVERS

IN CONNECTION WITH OTHER CARRIERS ON THE ROUTE

Export Bill of Lading No. 1748 Lot No. Contract Number NEUMAN 947

Dated at KANSAS CITY MO this 20TH day of AUG 1926, 192

Received, subject to the classifications and tariffs in effect on the date of the receipt of the property described in this bill of lading, at KANSAS CITY MO

From ARMOUR AND COMPANY

The following property, in apparent good order (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below:

Consigned to ORDER OF ARMOUR & CO LTD

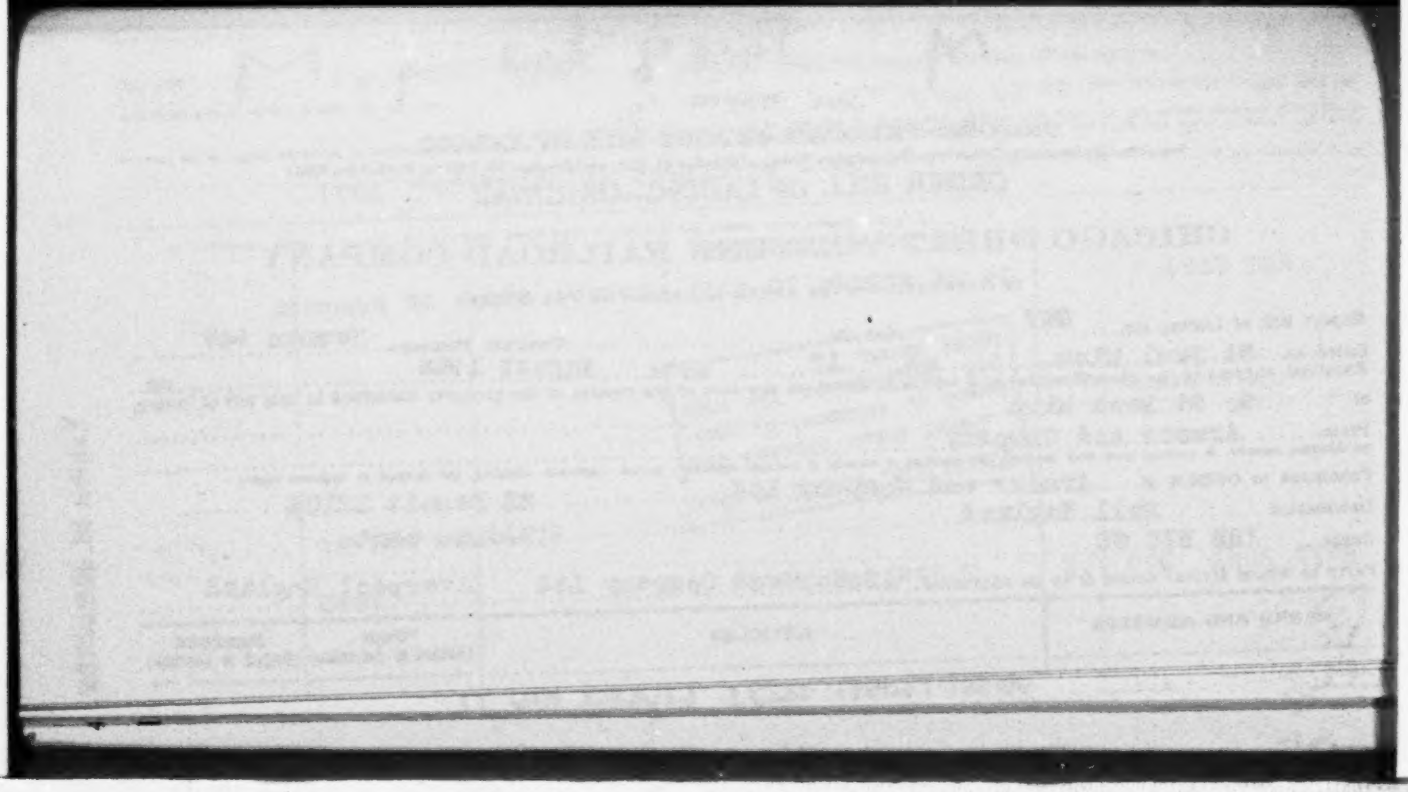
Destination HULL ENGLAND

Route WS RR PERMIT 12293 LICENSE RAC 77

If to whom arrival notice is to be addressed ARMOUR & CO LTD LIVERPOOL ENG

MARKS AND NUMBERS	ARTICLES	SHIPPER'S Weight (subject to correction).	Measurement (subject to correction).
(L)			

Exhibit L ATTACHED TO LIBEL



[fol. 57] EXHIBIT M ANNEXED TO LIBEL

Bill of Lading, Dated Aug. 17, 1926

(Photoprint, side folio 57-a)

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[fol. 58] EXHIBIT N ANNEXED TO LIBEL

Bill of Lading, Dated Aug. 21, 1926

(Photoprint, side folio 58-a)

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L-25 200m (WBO 179486) THIS IS U. S. A. N Bill of lading N

UNIFORM THROUGH EXPORT BILL OF LADING

(Prescribed by Interstate Commerce Commission Orders of October 31, 1921, and January 26, 1922, in Docket No. 6665.)

ORDER BILL OF LADING—ORIGINAL

The New York Central Railroad Company

IN CONNECTION WITH OTHER CARRIERS ON THE ROUTE

NEW YORK CENTRAL LINES

MERCHANTS DESPATCH

RED LINE WEST SHORE LINE WHITE LINE

JERSEY CENTRAL-LAKE SHORE DESPATCH

Export Bill of Lading No. 38244 Lot No. ..... Contract Number NEUMANN 947

Dated at CHICAGO ILL this 21ST day of AUG 1926 192..

Received, subject to the classifications and tariffs in effect on the date of the receipt of the property described in this bill of lading, at CHICAGO ILL

From ARMOUR & COMPANY

the following property, in apparent good order (contents and condition of contents of packages unknown) marked numbered, consigned and destined as indicated below:

Consigned to ORDER OF ARMOUR & COMPANY LTD

Destination HULL ENGLAND

Route NYC WS

Party to whom arrival notice is to be addressed ARMOUR & COMPANY LTD LIVERPOOL ENGLAND

MARKS AND NUMBERS	ARTICLES	*Weight (subject to correction).	Measurement (subject to correction)
(1)			

J. P. BRADY ..... New York, N. Y.
Foreign Freight Ag't, N. Y. C. R. R. Co.

W. V. CARROLL ..... Chicago, Ill.
Export Freight Ag't, N. Y. C. Lines

L. H. PETERS ..... Boston, Mass.
Foreign Freight Ag't, B. & A. R. R.

C. W. BOYNTON ..... Boston, Mass.
General Agent, B. & M. R. R.

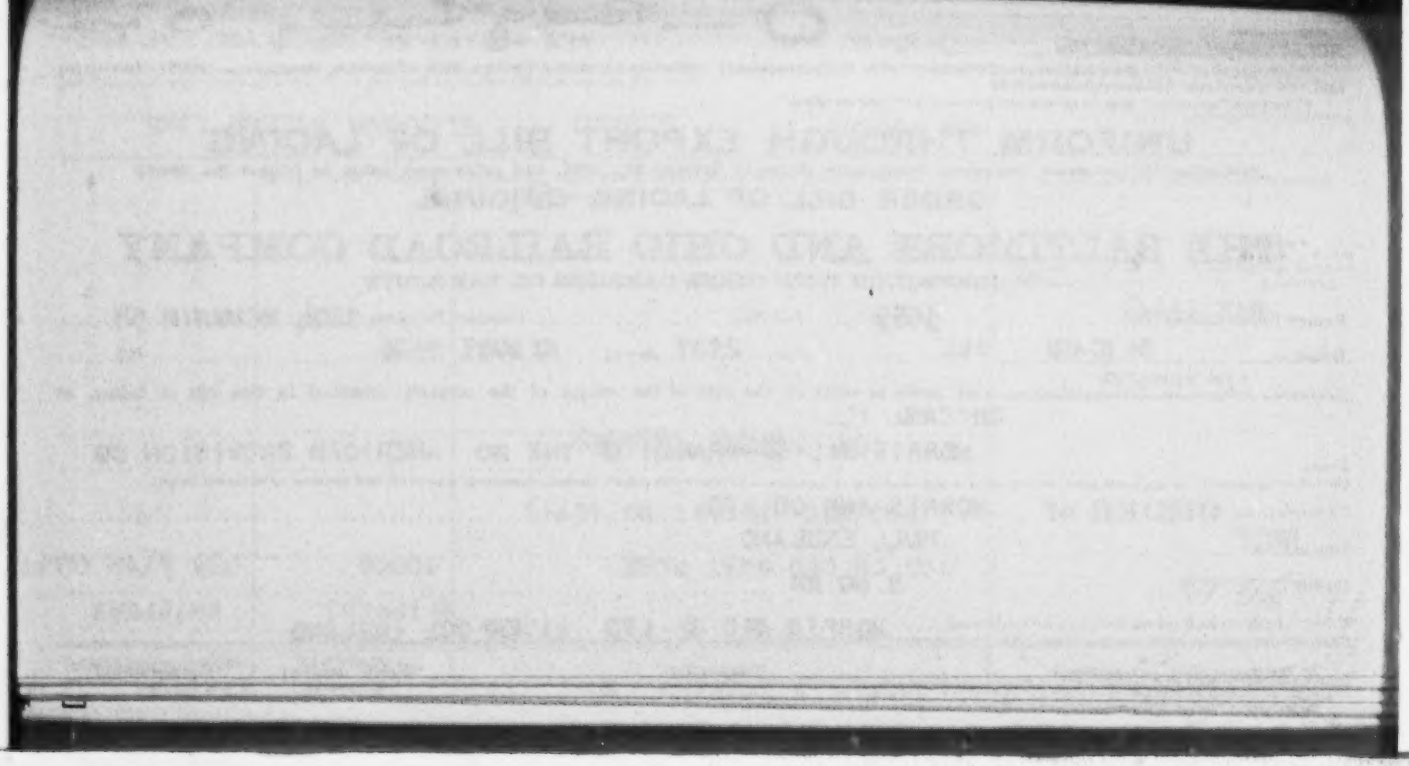
H. C. STAUFFER ..... Philadelphia, Pa.
General Freight Ag't, P. & R. Ry.

AMERICAN EXPRESS COMPANY,
General Foreign Agents, 65 Broadway, New York.

AMERICAN EXPRESS SYSTEM
Principal Offices in Europe.

LONDON	6	Haymarket
	84	Queen Street
PARIS	11	Rue Scribe
	54	Rue Des Petites Ecuries
AMSTERDAM	101	Kalverstraat
ANTWERP	87	Place De Meir
ATHENS	24	Stadium Street
BORDEAUX	8	Cours De Georges
BERLIN	45	Charlotten Strasse
BREMEN	22	Bahnhofstrasse
BRUSSELS	124	Blvd. Adolphe Max
BARCELONA	17	Calle Pontonella
CONSTANTINOPLE	15	Rue Voivode-Galata
COPENHAGEN	6	Holmens Kanal
CHRISTIANA	2	Dronningens Gate
GLASGOW	3	West Nile Street
GENOA	17	Piazza Nunziata
HAMBURG	9	Alsterdamm
HAVRE	43	Quai D'Orleans
LIVERPOOL	31	James Street
MARSEILLES	24	Rue Cannebiere
NAPLES		Piazza Del Martiri
ROME	58-60	Piazza Di Spagna
ROTTERDAM	26	A Zuidblaak
SOUTHAMPTON	25	Oxford Street

Exhibit N. ATTACHED TO LIE



[fol. 59] EXHIBIT O ANNEXED TO LIBEL

Bill of Lading, Dated Aug. 21, 1926

(Photoprint, side folio 59-a)

FOLD OUT IS TOO LARGE TO BE FILMED

[fol. 60] EXHIBIT P ANNEXED TO LIBEL

Bill of Lading, Dated Aug. 18, 1926

Front & Back

(Photoprints, side folios 60-a and 60-b)

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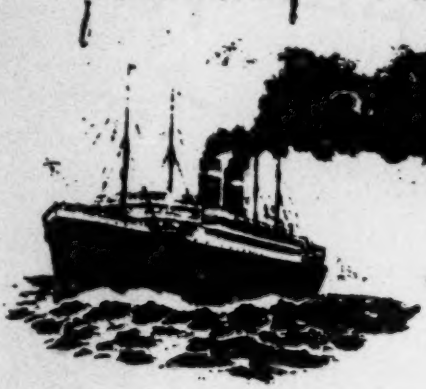
P. Front

EXPORT BILL O

NEW YORK BOSTON PHILADELPHIA CHICAGO DETROIT

CABLE ADDRESS



OSAKA SHOSEN KAISHA.
(OSAKA MERCANTILE S. S. CO.

80 BROAD STR

RECEIVED subject to the Classifications and Tariffs in effect on the date of issue at New York, N. Y., from THE LEAVITT MACHINE COMPANY

property described below, in apparent good order, except as noted (contents and c consigned and destined and to be carried to LATEST below.
To be delivered to the good Steamer

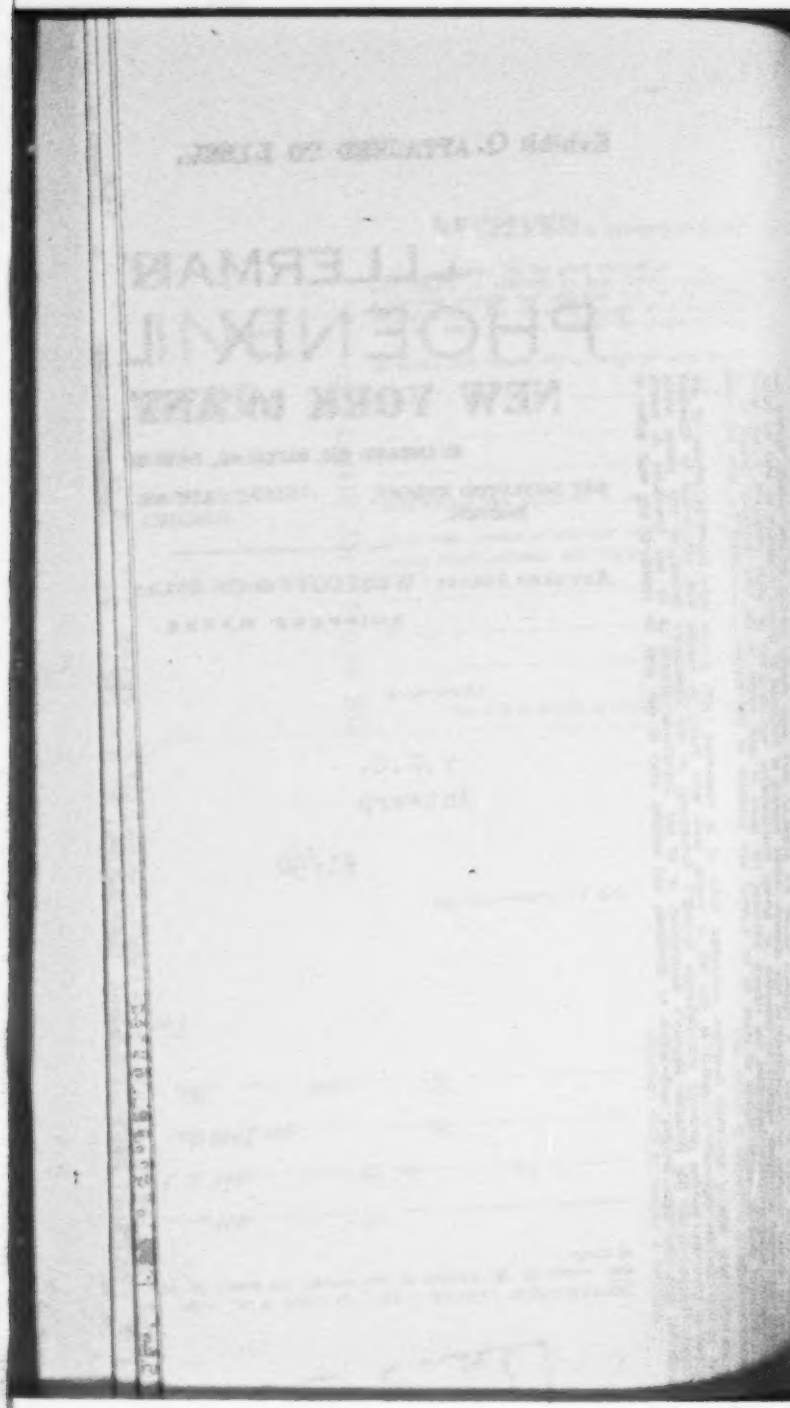
scheduled to sail AUGUST 27th, 1926

delivered in like order and condition at NEWCASTLE-on-TYNE, ENG
liberty to call at any port or ports in or out of the customary route, and to t signed, or to consignee's assigns, or to another carrier on the route to destina ment immediately on discharge of the property of the freight thereon, at th charges and average, without any allowance or drawback or discount.

CONSIGNED UNTO ORDER OF CALDWELL & COMPANY INC

ARTICLES: SIX (6) CASES VALVE RESEATING OUTFI

MARKS, NUMBERS OR ADDRESS AS ABOVE



[fol. 61] EXHIBIT Q ANNEXED TO LIBEL

Bill of Lading, Dated Aug. 23, 1926

(Photoprint, side folio 61-a)

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[fol. 62] EXHIBIT R ANNEXED TO LIBEL

Bill of Lading, Dated Aug. 18, 1926

Front & Back

(Photoprints, 62-a and 62-b)

FOLD OUT IS TOO LARGE TO BE FILMED

MADE IN U. S. A.
Bill of Lading
Signature Certificate No._____

R Print — R

Form 1447
Through Bill of Lading issued
Bills of Lading Conference
"The word "agreement

UNIFORM THROUGH EXPO

Prescribed by Interstate Commerce Commission Orders of October 21, 1921, January 30, 192

ORDER BILL OF LADING

WABASH RAILWAY

IN CONNECTION WITH OTHER CARRI

Export Bill of Lading No. 4005 Lot No.

Dated at KANSAS CITY MO. this 18 day

Received, subject to the classifications and tariffs in effect on the date of the receipt of the property described in this bill of lading, at KANSAS

From WILSON & CO INC OF KANSAS

the following property, in apparent good order (contents and condition of contents of packages unknown)

Consigned to ORDER OF WILSON & CO INC

Destination HULL ENGLAND

Route WABASH NYC

Party to whom arrival notice is to be addressed WILSON & CO IN

MARKS AND NUMBERS	ARTICLES
W&CO 908 HULL	5 BOXES WILSON SP HAMS IN BORAX. NYC PERMIT SHIPPERS
CAR NUMBERS	
WCL 6027	

REGOR SPACE

[fol. 63] EXHIBIT S ANNEXED TO LIBEL

Statement of Shipments

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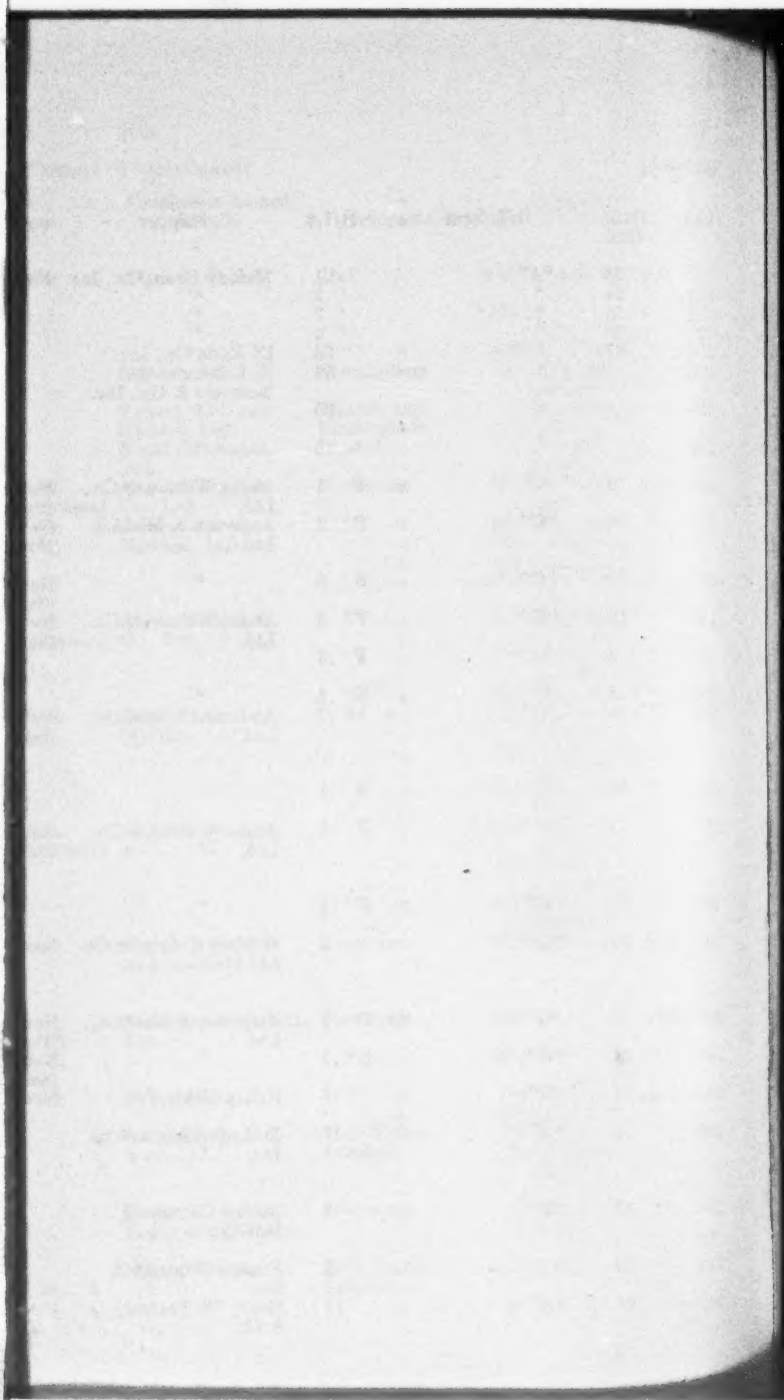
(Here follows statement, side folios 63-a, 63-b, 64 & 64-b, 65 & 65-a, 65-b, 66 & 66-a, and 66-b)

[fol. 63-a]

EXHIBIT

Item	Date, 1926	B/L form	B/L#	Shipper	From	Con
1	Aug. 26	Ellerman Wilson line "A"	18	Earle & Stoddart, Inc.	New York	Ship
2	"	"	16	"	"	
3	"	"	17	"	"	
4	"	"	11	Sanday & Co.	"	
5	"	"	10	"	"	
6	"	"	8	"	"	
7	"	"	9	"	"	
8	"	"	13	"	"	
9	"	"	12	"	"	
10	" 20	Cleveland, Cincin., Chi. & St. Louis R. W. C. B/L "B"	9094	Kingan & Co.	" (Indianapolis)	King
11	" 19	"	9051	"	"	
12	"	"	9052	"	"	
13	"	"	9053	"	"	
14	"	"	9054	"	"	
15	"	"	9055	"	"	
16	"	"	9056	"	"	
17	"	"	9057	"	"	
18	"	"	9058	"	"	
19	"	"	9059	"	"	
20	"	"	9060	"	"	
21	"	"	9061	"	"	
22	"	"	9062	"	"	
23	"	"	9063	"	"	
24	"	"	9064	"	"	King
25	"	"	9065	"	"	King
26	"	"	9066	"	"	
27	"	"	9067	"	"	
28	"	"	9068	"	"	
29	"	"	9069	"	"	
30	"	"	9070	"	"	
31	"	"	9071	"	"	



[fol. 67] IN UNITED STATES DISTRICT COURT

ANSWER

To the Honorable the Judges of the United States District Court for the Southern District of New York:

The answer of Ellerman's Wilson Line, Ltd. to the libel and complaint of Earle & Stoddart, Inc., et al., in a cause of contract and cargo damage, civil and maritime, alleges upon information and belief as follows:

First. It denies that it has any knowledge or information sufficient to form a belief as to the matters contained in paragraph numbered First of the libel.

Second. It admits the matters contained in paragraph numbered Second of the libel.

Third. It denies that Exhibit "S" is an accurate statement of the merchandise shipped on the steamship "Galileo". It denies that it has any knowledge or information sufficient to form a belief as to whether the consignments of merchandise mentioned, when shipped, were in good order and condition. It admits they were in apparent good order and condition when received.

Fourth. It denies the matters contained in paragraph numbered Fourth of the libel.

Fifth. It denies any breach of the contracts of carriage, and denies it has retained any proceeds from the sale of damaged cargo. It admits the other matters contained in paragraph numbered Fifth of the libel.

[fol. 68] Sixth. It denies that it has any knowledge or information sufficient to form a belief as to the matters contained in paragraph numbered Sixth of the libel.

Seventh. It denies the matters contained in paragraph numbered Seventh of the libel.

Eighth. It admits that the time within which the libel-ants might commence suit for non-delivery or damage covered by the bills of lading was extended by the respondent. It denies the other matters contained in paragraph numbered Eighth of the libel.

Ninth. It admits the admiralty and maritime jurisdiction of the United States and of this Honorable Court. It

denies the other matters contained in paragraph numbered Ninth of the libel.

Further answering and by way of defense the respondent alleges as follows:

Tenth. I. On or about the 28th day of August, 1926, the steamship "Galileo", having on board a general cargo consigned to Hull and/or Newcastle and/or Antwerp, sailed from the Port of New York bound for the Port of Hull, England. The said vessel was in all respects seaworthy, properly equipped, manned and supplied.

At or about 4:30 P. M. on August 28, 1926, after the vessel had sailed from the Port of New York and was at sea proceeding on its voyage to Hull, smoke was observed coming from a ventilator on board the "Galileo". An examination was made and it was discovered that a fire had [fol. 69] broken out in one of the holds of the said steamship. The master thereupon decided to return to the Port of New York.

Diligent efforts were made to extinguish the said fire while returning to the Port of New York, all the ventilators being covered in an effort to smother the fire.

In due course the vessel arrived at the Port of New York where every possible effort was made to extinguish the fire.

After considerable water had been pumped into the vessel, both by the ship's hose and the fireboats which attended the vessel, in an attempt to extinguish the fire, the master decided to beach the vessel on the Weehawken Flats. This was done. By reason of the fire and the quantity of water pumped into the vessel by the fire boats in an attempt to extinguish the fire, the vessel finally capsized, filled with water and sank on the Weehawken Flats. The said vessel and all of its cargo, except a small part thereof which was subsequently salvaged, became a total loss.

II. All the loss and damage which may have happened to any merchandise whatsoever, referred to in the libel herein, was caused by reason or by means of the aforesaid fire happening on board the "Galileo".

III. By reason of the premises and under the provisions of Section 4282 of the Revised Statutes of the United States, the respondent is not liable to answer for or make good to any person any loss or damage which may have happened to the merchandise referred to in the libel herein.

[fol. 70] Further answering and by way of a second defense the respondent alleges as follows:

Eleventh. I. The merchandise mentioned in the libel was shipped under various forms of bills of lading, which bills of lading constituted the contract of carriage between the parties. These bills of lading, although not similar in all respects, all contained a clause exempting the carrier from liability for "loss or damage occasioned by fire from any cause or wheresoever occurring."

The loss or damage referred to in the libel herein was occasioned and/or caused by a fire which took place on board the steamship "Galileo" after the merchandise had been loaded thereon.

II. By reason of the premises the respondent is not liable for any of the loss or damage mentioned in the libel.

Further answering and for a further and partial defense the respondent alleges:

Twelfth. The merchandise mentioned in the libel was shipped under various forms of bills of lading. These bills of lading, although not similar in all respects, all contained a clause limiting the carrier's liability to the various amounts mentioned in the respective bills of lading, unless a higher value was declared thereon and freight paid accordingly.

Higher values than those indicated in the respective bills of lading were not stated by the shippers. If the respondent is liable in any respect herein, the value placed on the merchandise referred to in the libel should not be higher than as indicated in the various clauses of the above mentioned bills of lading.

[fol. 71] Wherefore respondent prays that the libel herein be dismissed with costs, or that the Court will grant to the respondent such other and further relief as the justice of the cause may require.

Kirlin, Woolsey, Campbell, Hickox & Keating, Proctors for Respondent. Office and P. O. address: No. 27 William Street, Borough of Manhattan, City of New York.

Duly sworn to by Chas. H. Georgi. Jurat omitted in printing.

[fol. 72] IN UNITED STATES DISTRICT COURT

[Title omitted]

RESPONDENT'S EXCEPTIONS TO INTERROGATORIES ATTACHED TO LIBEL

The respondent excepts to the interrogatories attached to the libel herein on the ground that they are incompetent, irrelevant and immaterial.

Kirlin, Woolsey, Campbell, Hickox & Keating, Proctors for Respondent. Office & P. O. address: No. 27 William Street, Borough of Manhattan, City of New York.

[fol. 73] IN UNITED STATES DISTRICT COURT

[Title omitted]

ORDER OVERRULING RESPONDENT'S EXCEPTIONS TO INTERROGATORIES ATTACHED TO LIBEL—Oct. 7, 1927

The exceptions of the respondent to the interrogatories attached to the libel herein having duly come on for hearing on the Admiralty Motion Calendar of the above entitled Court, and after hearing James H. Herbert, Esquire, of Messrs. Kirlin, Woolsey, Campbell, Hickox & Keating, proctors for respondent, in support of said exceptions, and after hearing James W. Ryan, Esquire, of Messrs. Bigham, Englar & Jones, proctors for libellants, in opposition thereto, and due consideration having been had, and good cause appearing therefor,

It is hereby ordered, adjudged and decreed that the said [fol. 74] exceptions of the respondent to the interrogatories attached to the libel herein be and the same hereby are overruled, and the respondent is directed to file answers to the same within 15 days after the service on them of a copy of this order.

F. A. Winslow, U. S. D. J.

IN UNITED STATES DISTRICT COURT

MEMORANDUM OF WINSLOW, D. J., OVERRULING RESPONDENT'S EXCEPTIONS TO LIBELLANT'S INTERROGATORIES

Exceptions are overruled.

F. A. W., D. J.

Oct. 7, 1927.

IN UNITED STATES DISTRICT COURT

[Title omitted]

RESPONDENT'S ANSWERS TO INTERROGATORIES ATTACHED TO LIBEL

The respondent answering the interrogatories attached to the libel herein, states upon information and belief as follows:

Answer to first interrogatory: The cause of the fire on [fol. 75] board the S. S. "Galileo" is unknown to the respondent.

Answer to second interrogatory: (a & b) Respondent is unable to say where the fire broke out.

Answer to third interrogatory: (a) One lot of the coal in No. 3 'tween decks was put aboard the "Galileo" on or about June 30, 1926; the other lot was placed aboard on or about August 26, 1926.

(b) All coal was supplied by the Morrisdale Coal Company, 17 Battery Place, New York City.

(c) All coal in No. 3 'tween decks is believed to have been Morrisdale Miller Seam Coal, a bituminous coal.

(d) The respondent has no knowledge as to where the coal came from other than that it was purchased from the Morrisdale Coal Company.

(e) Each lot of coal was loaded on the "Galileo" in the harbor of New York.

(f) The relation of the stowage of these two lots of coal was that the first lot of coal was scattered about in No. 3 'tween decks, and the second lot of coal was stowed on top or alongside of the first lot.

(g) The first lot of coal had been on board since about June 30, 1926. The second lot of coal had been on board since on or about August 26, 1926.

[fol. 76] (h) The first lot of coal had been in No. 3 'tween decks since about June 30, 1926; the second lot since about August 26, 1926.

(i) The temporary wooden bulkhead was in good condition but was not supposed to be watertight.

(j) The respondent is unable to answer this question definitely at the present time, but is endeavoring to obtain the information and will supply it so soon as it is received.

(k) Same answer as (j).

Answer to fourth interrogatory: (a, b & c) The only information which the respondent has with respect to these interrogatories is contained in the survey report attached hereto in answer to the sixth interrogatory.

Answer to fifth interrogatory: The "Galileo" was proceeding to sea and was in the neighborhood of Fire Island Light Vessel when the first indications of a fire were observed.

Answer to sixth interrogatory: The scrap or rough deck and engine rooms logs were lost with the sinking of the vessel. The survey report is attached hereto.

Answer to seventh interrogatory: By reason of the absence of the crew of the vessel the respondent is at present unable to answer this interrogatory. The information will be supplied as soon as it is obtained.

Answer to eighth interrogatory: Same as answer to seventh interrogatory.

Answer to ninth interrogatory: Upon information and belief the fire continued until the vessel submerged on August 30, 1926, at about 4:50 A. M.

[fol. 77] Answer to tenth interrogatory: Upon information and belief, yes.

Answer to eleventh interrogatory: Upon information and belief the offer of assistance was temporarily refused.

Answer to twelfth interrogatory: The offer was temporarily refused by the master in the exercise of his best judgment.

Answer to thirteenth interrogatory: (a) Upon information and belief, yes.

(b) Upon information and belief, yes.

(c) Upon information and belief the offer was temporarily refused.

(d) In the exercise of the master's best judgment.

Answer to fourteenth interrogatory: (a) At the present time the respondent is unable to make any other answer than that the master refused the offer of assistance in the exercise of his best judgment.

(b) No.

Answers to fifteenth and sixteenth interrogatories. The libellant has, with the permission of the respondent, obtained copies of all such communications from the Radio Corporation of America.

Answer to seventeenth interrogatory: (a) Attempts were made to extinguish the fire first, by smothering, and then by the ship's and fireboats' hose.

(b) Upon information and belief, no.

[fol. 78] Answer to eighteenth interrogatory: (a & b) Some coal, the exact amount being unknown except that it was possibly in excess of thirty-five tons, was shifted from No. 3 shelter deck to the side pockets and on deck.

Answer to nineteenth interrogatory: (a, b & c) No, the vessel was submerged or at least to a great extent, and no observations were possible.

Answer to twentieth interrogatory: Because the vessel as a result of the fire was almost entirely submerged.

Answer to twenty-first interrogatory: See protest attached.

Answer to twenty-second interrogatory: See survey and report attached.

Report

Charles E. Ross, Naval Architect-Engineer, Surveyor, 16 Exchange Place, New York

August 15, 1927.

Messrs. Kirlin, Woolsey, Campbell, Hickox & Keating, 27 William Street, New York City, N. Y.

Dear Sirs:

S/S "Galelio"

At your request, we examined the S/S "Galelio", while she laid off Gravesend Bay, off Bath Beach, New York, on August 13, 1927.

[fol. 79] At the time of the examination, the vessel was listed, say 25° to starboard.

The Merritt-Chapman & Scott wrecking boats and scows were alongside washing down and pumping into scows there grain, mud and debris. The pumping was being carried on mostly in way of No. 2 hold.

There were evidences of fire in No. 2 lower 'tween decks (space below the shelter deck space) between Nos. 2 and 3 hatches, just aft of No. 2 hatch on the port side of the vessel.

There was practically no damage to the deck at the lower 'tween deck level, but the deck over the between decks forming the bottom of the shelter deck was badly buckled.

There was a wood deck stringer extending entirely across the vessel; this stringer was evidently for a wood bulkhead, which bulkhead was located about 14 feet aft of No. 2 hatch. There was some coal on the after side of this line of wood stringer. This coal was on the starboard side of the vessel, and the coal there was about 18 inches to 24 inches in height above the deck.

The greatest damage by fire appears to be about 12 feet aft of No. 2 hatch, and about 13 feet inboard from the port side of the vessel. This greatest damage appears in way of a girder there. This would make the greatest amount of damage about 2 feet forward of the wood bulkhead.

The 'tween deck space, in way of Nos. 2 and 3 hatches, is about forty-seven frame spaces long, each frame space measuring about 27 inches.

Calling the aftermost space No. 47, the fire damage extends from about frame No. 19 to frame No. 27, and the wood bulkhead above referred to was located at about frame [fol. 80] No. 26; that is, the fire damage apparently extends about one frame space after the wood bulkhead, and most of the damage from No. 19 to No. 26 is forward of the wood bulkhead, or where cargo was stored.

The vessel is still quite dirty and no further examination was made.

(Sgd.) Chas. E. Ross, Surveyor. (Sgd.) C. L. Burke, Surveyor Attending.

UNITED STATES OF AMERICA

STATE OF NEW YORK,
City of New York, ss:

By this public instrument of declaration and protest, be it made known and manifest to all whom it may concern, that on the — day of ——, in the year one thousand nine hundred and ——, before — personally appeared Charles Barron master of the Str. "Galileo" of Hull of about 4091 tons net register, and noted with him, in due form of law, his protest for the uses and purposes hereinafter mentioned. And now on this First day of September in the year 1926 before me Seymour Page a notary public in and for the county of New York in the State of New York, duly commissioned and sworn, and practising in the City of New York and State aforesaid, comes the said master, and requires me to extend his said protest, and together [fol. 81] with him come and appear, F. Ellison, J. C. Oxtoby, T. Golightby and J. McKee, all belonging to the aforesaid vessel, all of whom being by me duly sworn depose and say that the said vessel laden with Grain and General Cargo, being in every respect seaworthy, and in all things fitted and provided for her intended voyage, sailed on the 28th day of August, 1926, from New York bound to Hull, Newcastle and Antwerp. That she returned to New York on Aug. 29th, 1926, the incidents of the voyage being fully set forth in the within narrative.

"Galileo"

Aug. 28, 1926.—At 10:17 A. M. this vessel left her berth at the Ellerman-Wilson Line Pier, Hoboken, with grain and a general cargo, for Hull, Newcastle and Antwerp. At 11:52 A. M. she anchored in Gravesend Bay for the purpose of loading powder. At 12:50 P. M. the anchor was weighed and the vessel proceeded to sea. There was a light to moderate wind with a slight sea, and the weather was fine and clear. At 4:35 P. M. smoke was observed coming from the forward starboard ventilator at No. 3 hold, and it was decided to put back to Gravesend Bay. At 8:30 P. M. the smoke increased in volume from the No. 3 starboard ventilator and the ventilator cowls were covered up. At 10:10 P. M. the vessel anchored in Gravesend

Bay and a message was sent out requesting the vessel's agents in New York to arrange for laborers to come and move bunker coal. The powder was then moved from the magazine to the upper deck.

Aug. 29, 1926.—At 1 A. M. a wireless message was sent [fol. 82] out for a fireboat to stand by. At 3 A. M. a fireboat was alongside, but was informed that assistance was not required. During the morning there was a fresh strong W. N. W. wind and the weather was fine and clear. At 10:20 A. M. laborers came on board and commenced discharging powder from the upper deck to a lighter. At 10:55 A. M. the discharge of powder was completed and the anchor was weighed and the vessel proceeded to Weehawken with a pilot aboard. At noon the laborers commenced moving coal from No. 3 hold to side pockets. At 12:40 P. M. the vessel anchored below 34th Street Ferry, Weehawken. At 5:30 P. M. the laborers ceased working on account of smoke; they had previously been working at intervals. At 5:32 P. M. commenced pumping water into No. 3 hold from the ship's hose. At 6:40 P. M. sent a wireless for a fireboat and the ship's hose was pumping water into No. 2 'tween deck. At 7:20 P. M. the fire boat "James Duane" came alongside and commenced pumping water into No. 2 'tween deck. Twenty-five minutes later the ship commenced to list to starboard and at 8 P. M. the crew commenced working coal out of No. 3 hold. At 11:30 P. M. the vessel had a list of 20° to starboard. At 11:55 P. M. the anchor was weighed and the vessel was beached on the West Shore, near 34th Street Ferry. The vessel then had a list of 25° to starboard.

Aug. 30, 1926.—The fireboat continued to pump water into Nos. 2 & 3 holds. At 2:30 A. M. the salvage steamer "Chapman Brothers" and the tug "Alert" came alongside to assist in holding the ship on the beach, and at 2:45 A. M. a second fireboat arrived and commenced pumping water [fol. 83] immediately. At 4 A. M. the vessel commenced to list further and at 4:50 A. M. she turned over on her beam ends, broadside on the beach.

And deponents further say, that the said vessel was, at the commencement of the voyage, staunch and strong, and had her cargo well and sufficiently stowed, and her hatches properly closed and secured; and that during the said

voyage they, together with the rest of the crew, used their utmost endeavors to preserve the said vessel and her cargo, tackle and apparel from damage or injury. And that any loss, damage or injury which has arisen or accrued, or that may arise or be sustained, in any way or manner whatever, is solely due to the accidents and difficulties herein set forth, and not to any negligence, want of skill, vigilance or exertion on the part of deponents, or any of the officers or men of the said vessel.

(Signed) Master, C. Barron. Chief Officer, F. Ellison. Chief Engineer, J. C. Oxtoby. Boatswain, Thomas Golightby. A. B., Joseph McKee.

Wherefore the said master hath requested me to protest and at his request I do publicly Protest, against all persons whom it may concern, and against the accidents, casualties and circumstances already set forth in the foregoing declaration, for all manner of losses, costs, damages, charges, expenses and injuries whatsoever, which the said vessel and her cargo on board and the freight by her earned, or to be earned, or either of them or any part thereof, have already [fol. 84] sustained, or may hereafter sustain, by reason or means of the foregoing premises.

Thus done and protested in the City of New York, this 1st day of September, in the year one thousand nine hundred and twenty-six.

In testimony whereof I have hereunto set my hand and affixed my notarial seal.

(Sgd.) Seymour Page, Notary Public, New York County. N. Y. Co. Cl'k's No. 222, Reg. No. 8253. Commission expires March 30, 1928. (Seal.)

STATE OF NEW YORK,
County of New York, ss:

I, Seymour Page, a notary public in and for the county of New York, and practising in the City of New York, do certify the foregoing to be a copy of an original protest made before me.

In testimony whereof I have hereunto set my hand and notarial seal this 2nd day of November, one thousand nine hundred and twenty-seven.

(Signed) Seymour Page, Notary Public, New York County. N. Y. Co. Cl'k's No. 222, Reg. No. 8253. Commission expires March 30, 1928. (Seal.)

[fol. 85] September 1, 1926.

Messrs. Ellerman's Wilson Line, Inc., Hull, England.

DEAR SIRS: I have to confirm cable sent by the New York Office Company, advising "Galileo" was sunk on fire in New York Harbor at 4:50 A. M. Monday, August 30th. The circumstances are as follows:

We sailed from New York at 10:30 A. M. August 28th, and proceeded to Gravesend Bay and loaded eight tons of gunpowder, sailing from there at 12:50 P. M. At 4:40 P. M. when off Fire Island Light Vessel, smoke was observed coming from No. 3 Hold Ventilator, starboard side, and smelt as though wood was burning. As No. 3 Tween Deck and Shelter Deck was full of bunker coal shifted in New York during the week on top of about 160 tons of coal left from previous voyage, I came to the conclusion that spontaneous combustion had set fire to the bunkers and bulkhead between No. 2 and 3 Tween Deck on the spar ceiling. We took No. 2 hatches off and found no smell of fire in No. 2 Tween Deck, which contained spelter and about 8000 boses of lard in the after part. I decided to return to New York, and at 5:19 P. M. turned the ship around. I blocked off all ventilation to exclude air, concluding this best thing to do until our arrival back in New York when assistance could be obtained to shift coal to get at the seat of fire, which meant shifting from 250 to 300 tons. I sent a wireless to Wilsonlyn New York "Bunkers in No. 3 tweendeck on fire returning New York arriving Ambrose Light Vessel 8:30 suggest bunkers discharged or shifted to No. 2 [fol. 86] shelter deck" which was empty. After taking on Pilot on Board we anchored in Gravesend Bay at 1:10 P. M. I sent a wireless to Wilsonlyn New York "Anchored Gravesend Bay suggest sending gang off to discharge bunkers now on fire". The crew commenced getting up the 86 cases of gunpowder on deck; handy to discharge or throw overboard in case of emergency.

At 2.00 A. M. received wireless message "Labor will arrive as soon as possible". At 10:20 coal laborers and Mr. Sanderson with tug "Powder Lighter" arrived; Gunpowder was discharged and we got under way, and proceeded up the river and anchored off Weehawken at 0.40 (about one mile above our Hoboken pier); meantime,

laborers removing bunkers from No. 3 hold into side bunkers and on deck. At 5:30 laborers ceased working coal on account of smoke. As No. 2 Tween Deck by this time was getting hot, we commenced pumping water into No. 3 Shelter Deck from ship's bow. By this time laborers had shifted about 35 tons bunkers. At 6:40 sent wireless message for Fire Boat. At 7:20 Fire Boat alongside commenced pumping water into No. 2 Tween Deck, from which smoke was now issuing when hatches were taken off. At 8:00 P. M. crew working coal from No. 3 Shelter Deck. At 11:00 P. M. crew compelled to stop working the coal as dense smoke was by this time issuing from No. 3 Tween Deck. At 11:10 Fireman got hoses down No. 3 Tween Deck and commenced pumping water into ship. By this time ship had a 21° list to starboard and chief of Fire Boat informed me that fire was growing and sent wireless to send another Fire Boat, also that it was advisable to beach the [fol. 87] ship, as he was going to put two six ft. pipes in the ship. At 11:55 I hove up anchor and beached the ship which lay about one-quarter mile away on the Jersey side of the river and was composed of soft mud. We took soundings which showed 17 ft. over the stem, 28 ft. amidships and 40 ft. over the stern. By this time the ship had a 25° list.

About 12:45 A. M. August 30th another Fire Boat came alongside and commenced pumping water into No. 2 and 3 Tween Decks. By this time dense columns of smoke were issuing from No. 2 and 3 Tween Decks, also flames. At 2:00 A. M. sent wireless message for two tugs to assist keeping ship on bank as by this time the first of the flood tide had commenced and the ship was still listing and slewing broadside on to the beach and inclined to slip off. Two salvage steamers arrived about 2:30 A. M. and took up position on port bow and port quarter and held ship broadside on to beach. Ship had now a list of 21°, having come up 5°. About 4 A. M. the ship commenced listing heavy to 26°. At 4:15 list 30° and 4:30 list 35°. Up to this time I did not think it possible that the ship would turn over on her beam ends, when suddenly she keeled over until the water flowed over the hatch combings and she laid on her beam ends at 4:50 and was submerged about 32 ft. starboard side under water heading about S. W.

The crew saved most of their effects, but the Officers, Engineers and myself lost nearly everything as we did not

realize, as I have stated before, that the ship would sink.

The crew are leaving here tomorrow except the Chief Engineer, Chief Officer and myself, the W/U Operator [fol. 88] being transferred to another ship here.

I very much regret having to report this catastrophe, but I did my best under the circumstances for everyone concerned.

I am dear sirs,

Yours obediently, —— ——, Master.

Duly sworn to by Chas. H. Georgi. Jurat omitted in printing.

[fol. 89] IN UNITED STATES DISTRICT COURT

[Title omitted]

ORDER AMENDING LIBEL—Oct. 25, 1928

On the annexed consent, and on motion of Bigham, Englar & Jones, proctors for the libellants herein, it is

Ordered that the libel heretofore filed herein be and the same hereby is amended in the following respects:

1. The names of Anderson & Mishkin, Ltd., William S. Gray & Co., Herbert Smart & Co., Ltd., Barter Trading Co., Ltd., Henry Heide, Inc., British Merchants, Inc., Ltd., D. L. [fol. 90] Sterling and Sons, Inc., John Trauers & Son, Ltd., Bray Gibb & Co., Ltd., Robins Conveying Belt Co., Fraser & Chalmers Engineering Works, International Combustion, Ltd., Eugene Donzelot & Son, F. W. Berk & Co., Ltd., Haines Coote & Co., Henry W. Peabody & Co. be stricken out as parties libellant.

2. Sub-paragraphs numbered 133 to 150, inclusive, of the first article of the libel be stricken out.

3. Items numbered 229 to 246, inclusive, of Exhibit S, annexed to and made a part of the libel, be stricken out.

4. The amount of damages demanded in the seventh article of the libel be reduced from the sum of Seven hundred thousand ($700,000.00) Dollars to the sum of Six hundred and fifty thousand ($650,000.00) Dollars.

J. W. Mack, U. S. C. J.

Consent is hereby given to the entry of the foregoing order.

Dated New York, October 24, 1928.

Kirlin, Woolsey, Campbell, Hickox & Keating,
Proctors for Respondent.

[fol. 91] IN UNITED STATES DISTRICT COURT, SOUTHERN DISTRICT OF NEW YORK

No. 96/206

EARLE & STODDART, INC., et al., Libelants,

vs.

ELLERMAN'S WILSON LINE, LTD., Respondent

Before Hon. Frank J. Coleman, District Judge

Statement of Evidence

New York, November 6, 1929—10:30 A. M.

APPEARANCES

Messrs. Bigham, Englar & Jones, Proctors for libelants; Mr. Jones and Mr. Ryan of counsel.

Messrs. Kirlin, Woolsey, Campbell, Hickox & Keating, Proctors for respondent; Mr. Keating, Mr. Potter, and Mr. Herbert, of counsel.

The claims of the libel and answers are stated.

Mr. Jones: I move that the answer be stricken from the files until the information sought for in the seventh interrogatory is produced.

Mr. Keating: We are prepared to supply that now.

Mr. Jones: Will you call your man——

Mr. Keating: No, I will answer it the way an interrogatory should be answered——

[fol. 92] Motion denied.

Exception.

Mr. Jones: I ask that the papers be produced. I asked him to produce——

Mr. Keating: If your Honor please, I understand Mr. Jones is opening his case. We will produce them at the trial.

The Court: He has the right to ask you for them now.

Mr. Keating: Do you wish me to produce them now, sir?

The Court: If Mr. Jones requested them, certainly.

(The papers are produced.)

Mr. Jones: I file with the Court for the Court's convenience the interrogatories and answers to the interrogatories which have been typed by my office in sequence, so that they will be more readily read. (Handing copy to counsel.) Are these all the plans you have of this ship?

Mr. Keating: I am not sure there isn't another one. That is the builder's plan. (Handing to Mr. Jones.)

Frank C. Weitzman, called as a witness on behalf of the libelant, having been duly sworn, testified as follows:

Direct examination.

By Mr. Jones:

Q. You are a photographer, are you not, Mr. Weitzman?

A. Yes, sir.

Q. And at our request did you go on board the steamship "Galileo" for the purpose of taking photographs?

A. I did.

Q. Do you know the date on which you went aboard?

A. I made two trips; I went down on August 13th and 17th, 1927.

[fol. 93] Q. Have you the negatives which you took at the time?

A. I have.

Q. I show you a photograph——

The Court: Have you seen these, Mr. Keating?

Mr. Keating: No, I haven't.

The Court: Why don't you look at them and perhaps they may be put in evidence?

Mr. Jones: The date appears on the pictures.

Mr. Keating: We have no objection.

Mr. Jones: Then I offer in evidence a photograph of the steamship "Galileo", taken on the 17th day of August, 1927, by W. L. Drummond, photographer, this photograph being of the lower between decks.

Mr. Keating: Well, that we don't know.

Mr. Jones: Well, I will establish that in a moment.

The Court: You can ask him about that right now.

Q. Do you know what that photograph represents?

A. This photograph was made under the direction of Mr. Bagger, I don't know just which part of the ship, it is one of the between decks.

Mr. Jones: I will call Mr. Bagger in a moment and identify them.

It is agreed that the photographs may be offered in evidence after being identified by Mr. Bagger. There are six photographs.

(Witness withdrawn.)

[fol. 94] WILLIAM R. BAGGER, being duly sworn and examined as a witness for the libelant, testifies as follows:

Direct examination.

By Mr. Jones:

Q. Mr. Bagger, I show you a photograph which was taken by Mr. Drummond on the 17th of August, 1927, and ask you what that photograph represents?

A. That photograph is a view of the lower between deck of the steamship "Galileo" between the No. 2 and No. 3 hatches looking toward the port side of the vessel.

Mr. Jones: This has been marked Exhibit 1 in the United States District Court for the Southern District of New York, November 6, 1929.

Q. Looking at Exhibit 1, Mr. Bagger, I direct your attention to——

Mr. Keating: What is that you are looking at, Mr. Bagger?

The Witness: The original sketch.

Mr. Jones: I will ask you about that later. Don't bother with it now.

Q. I direct your attention to something that appears on the photograph where I now have my finger, and ask you to tell me what that is?

A. That is a piece of sill that extended athwartship in this compartment, and adjacent to it is remnants of both coal and cargo taken.

Q. Now, will you mark that sill—mark it in ink as it is a photograph, your pencil won't show—mark it "Piece of sill"?

A. (Witness does so.)

[fol. 95] Q. You are a ship surveyor, Mr. Bagger?

A. Yes, sir.

Q. And have been for a number of years?

A. 14 years.

Q. From your knowledge of ships can you tell me whether or not that piece of sill was a part of a bulkhead that was originally constructed there?

A. I believe so.

Q. And state the grounds of your belief.

A. First off, it had been tommed off or sawed off from the stanchion shown in this photograph; furthermore, in line with the sill was a quantity of caked coal and grease that was banked off square on the forward end, indicating that there had been a bulkhead at that place.

Q. Now I show you a photograph and ask you whether that photograph was taken under your direction by Mr. Drummond or by Mr. Drummond's assistant on—what is the date on the photograph?

A. 17th of August, 1927.

Q. 17th of August, 1927?

A. It was.

Mr. Jones: I ask that it be marked in evidence.

(The photograph is marked Libelant's Exhibit 2 in evidence.)

Q. Now will you look at Exhibit 2 and describe to the Court what that is a photograph of?

A. That photograph is the same location as the previous photograph, except that it is looking toward the starboard

side of the vessel, and this shows in more detail and extent the caked coal and grease indicating the location of the bulkhead.

Q. Will you mark on the photograph the location of the [fol. 96] bulkhead as indicated by the caked coal and grease?

A. (Witness does so.)

Q. Now I show you a photograph which was taken on the 17th of August, 1927, by Mr. Drummond, and ask you to tell me what that photograph represents?

A. That is a view of the same compartment, looking aft on the port side forward of the said bulkhead, showing the banked piles of caked coal and grease.

Q. Does it show any part of the bulkhead itself?

A. It shows the self-same sill piece.

Q. Will you mark that, please?

A. (Witness does so.)

(The photograph is offered in evidence and marked Libelant's Exhibit 3 in evidence.)

Q. Now, looking at Exhibit 3, Mr. Bagger, there seems to be some wooden structure in the background of that picture. Tell me what that is, please.

A. The part on the left in the way of the hatch was a temporary grain feeder; the portion on the right containing a passageway was a bulkhead between the No. 3 lower between deck and the side bunkers.

Q. Now I show you another photograph which was taken on the 17th of August, 1927, and ask you what that photograph represents?

A. That represents the compartment containing the sill piece aforementioned, looking aft on the port side of the vessel, the camera having been stationed forward of the said bulkhead.

Mr. Jones: I ask that the photograph be marked in evidence.

[fol. 97] (Marked Libelant's Exhibit 4 in evidence.)

Q. Will you be good enough to mark the sill piece with ink on the photograph?

A. (Witness does so.)

Q. And what is the wooden structure that is in the background of this picture?

A. On the left side is a temporary grain feeder; on the right side is the wooden bulkhead separating this compartment from the said bunkers.

Q. Now I show you another photograph, which is apparently taken on the "Galileo" on the 13th of August, 1927, and ask you what that one represents?

A. That represents the same compartment and the camera has been placed on the port side of the vessel looking about 45 degrees forward, and shows the caked coal and grease, immediately aft of the position of the bulkhead, as identified by the sill piece.

Mr. Jones: I ask that it be marked in evidence.

(Marked Libelant's Exhibit 5 in evidence.)

Q. I show you another photograph and ask you what that photograph represents.

A. This is a photograph taken with the camera, located at the port forward corner of No. 2 hatch looking down into the vessel.

Q. The photograph was apparently taken on the 13th of August, 1927, is that correct? A. Yes, on the date there.

Mr. Jones: I offer it in evidence and ask that it be marked.

[fol. 98] (It is marked Libelant's Exhibit 6 in evidence.)

Q. I show you another photograph and ask you what that photograph represents?

A. That photograph is a view of the upper between deck compartment between No. 2 and No. 3 hatches, looking aft, the camera having been placed at the port after corner of No. 2 hatch.

Mr. Jones: I ask that the photograph be marked in evidence.

(Marked Libelant's Exhibit 7 in evidence.)

Q. There is a light background in that photograph. Will you tell me what that background is—Libelant's Exhibit 7?

A. That is simply the light that came down through the No. 3 hatchway.

Q. And what was back there, do you remember?

A. There was a wooden bulkhead at the sides with passageways leading from the No. 3 compartment into the side bunkers.

Q. Now, there appear to be a number of pieces of wood where I put my finger. Can you tell me what those pieces of wood were?

A. That is a portion of a wooden bulkhead that was in place between the No. 2 and No. 3 hatches in this upper between deck.

Q. Will you take your pen and mark that, "Remains of wood bulkhead"?

A. (Witness does so.)

Q. And I show you another photograph which was taken on the 13th of August, 1927, and ask you what this photograph represents?

[fol. 99] A. That is a photograph of the caked coal and grease in the No. 3 lower between deck with the camera having been placed forward of the bulkhead identified by the remaining sill piece and further showing the square banked edge of the coal and grease.

Mr. Jones: I ask that it be marked in evidence.

(Marked Libelant's Exhibt 8 of this date.)

Q. These photographs were all taken after the "Galileo" was raised by Merritt & Chapman, weren't they?

A. Yes, sir.

Q. Now I show you a group of photographs, consisting of one, two, three, four, five, six and seven views, and ask if those photographs were taken under your supervision on the 13th of August, 1927?

A. Yes, sir.

Mr. Jones: I ask that the group be marked in evidence as one exhibit.

(Marked Libelant's Exhibit 9 in evidence.)

Mr. Keating: I would like to have an opportunity to order a set of those photographs, your Honor.

Mr. Jones: I will be glad to supply you with a set.

Mr. Keating: Thank you.

Q. Now, so that the record may be clear, will you take Exhibit No. 9 and describe what each of the photographs

[fol. 100] represents, saying "The first view represents" such and such, and so on, so the record will be clear as to what they show?

A. The first view is a view from the bridge looking forward. The second view is a view of the No. 2 hatchway, taken from the bridge. The No. 3 is a view of the fore deck, taken from forward of No. 1 hatch. No. 4 is a view of the after deck taken from the stern. No. 5 is a view of the engine and boiler room casings on this vessel. No. 6 is a view of the after deck looking aft. No. 7 is a view of one of the holds which I can't definitely identify—looking down into the hatchway.

Q. Now, Mr. Bagger, at my request did you make a sketch of the arrangement of the between decks of the steamship "Galileo"?

A. I did.

Q. Did you make a sketch indicating the position of these wooden bulkheads which you have pointed to in the various photographs which I have shown you?

A. I did.

Q. Now, have you your sketches in your pocket?

A. Yes (producing same).

Q. You have handed to me three sheets of paper. I show you one sheet of paper and ask you what that sheet of paper is?

A. That is a profile plan of the steamer "Galileo" showing the portion of the vessel in the way of the No. 2 and No. 3 hatches, from the keel to the weather deck.

Q. Is it drawn to scale?

A. Approximately.

Q. Do the measurements appear on the sketch?

A. No, the measurements do not, but frame spacing is indicated.

Q. What do you mean by "frame spacing"?

A. The fore and aft distance between the frames.

Q. And the frames are the ribs of the ship?

A. Yes, sir.

[fol. 101] Q. And what is the distance between those frames?

A. 27½ inches.

Q. Did you measure that?

A. Yes, sir.

Q. You have indicated, you say, the frame space there?
A. Yes, sir.
Q. Where is it indicated?
A. Toward the lower between deck, by the figures 5, 15, 20 and 25.

Mr. Jones: I offer the sketch in evidence.

(Marked Libelant's Exhibit 10 in evidence.)

Mr. Keating: I object to this on the ground that it purports to show more than the witness has stated it does; it has statements in here about coal and cargo and various things of that kind.
Mr. Jones: I will examine him further on that.

Q. Mr. Bagger, you have the word coal written on that statement; what did you intend to indicate by that?
A. That coal had been carried in that compartment.
Q. Was it quite obvious to you from what you saw that the coal had been carried in that compartment?
A. Yes, the photographs substantiate that, by the caked coal and grease.
Q. And you have "cargo" written on there?
A. That means that cargo has been stowed in those spaces.
Q. Was it obvious from your examination that cargo had been stowed in those spaces?
A. I can't say that exactly; it was more obvious where coal had been, but where coal was not, it was assumed that cargo had been there.
[fol. 102] Q. Then you have a ventilator appearing on the sketch?
A. Yes, sir.
Q. Did you see that ventilator there?
A. Yes, sir.

Mr. Jones: I offer the sketch in evidence, if your Honor please.
Mr. Keating: I make the same objection; the plan is obviously inaccurate.
The Court: Objection sustained as to the designation of coal and cargo; that is his inference, and I will allow the sketch in evidence, with the exception of those two words.

(Marked Libelant's Exhibit 11 of this date.)

Q. I show you another sketch and ask you if you made that sketch?

A. I did.

Q. Will you tell us what that sketch shows?

A. That is a deck plan of the lower between deck and shows the locations of the No. 2 hatch, the No. 3 hatch, the grain feeder, the wooden bulkhead, the ventilators and the passageways of this vessel.

Q. You made this up yourself?

A. Yes, sir.

Q. The measurements were taken by yourself?

A. Yes, sir.

(The sketch is offered in evidence.)

(Marked Libelant's Exhibit 12 of this date.)

Mr. Keating: May I ask this witness a question?

The Court: Yes.

[fol. 103] By Mr. Keating:

Q. Looking at Exhibit No. 12, Mr. Bagger, you have a place marked on here No. 3 hatch?

A. Yes, sir.

Q. Now, where is this No. 3 hatch, is that on the main deck?

A. This is the plan of the lower between deck, the lowest deck.

Q. Looking down into the lower hold?

A. Yes, sir.

Q. It doesn't purport to show anything above that?

A. No, sir. It is really a birds-eye view of the lowest between deck.

By Mr. Jones:

Q. This place is as you look on the deck of the lower between decks?

A. Yes, sir.

Q. What would be underneath this deck?

A. It would be the lower hold.

Q. And above it what?

A. The upper between deck.

Q. And then the shelter deck?

A. The weather deck.

Q. Now, refer to this rectangle which is marked No. 3 hatch. Will you described to the Court just how that was arranged?

A. The No. 3 hatch straddled the steel bulkhead that was in the lower hold, and this steel bulkhead extended up through the lower between deck compartment in the way of the hatch, only at the sides, the bulkhead was completed with wood in which there were passageways just forward of the aforementioned steel bulkhead and in way of the lower compartment there was a grain feeder.

Q. And that is for the purpose of permitting grain to run [fol. 104] down from above into the ship's hold?

A. Yes, sir.

Q. Now look at Exhibit No. 3 and show to the Court whether or not the grain feeder and the bulkhead appear on that photograph, and show that the plan which I believe is Exhibit No. 11, which you have in your hand—shows what is shown on the photograph?

A. If your Honor please, this photograph was taken from a position about here (indicating), marked with the letter A in pencil on Exhibit 11. Looking in that direction indicated by an arrow. If your Honor please, this is the sill piece, indicating the presence of a wooden bulkhead—you point to the sill piece which you have marked "sill piece" on Exhibit 3—and then point on the plan to the line marked wood bulkhead, just forward of frame 20. This wooden structure in the way of the hatch is the grain feeder, which is so marked on the plan.

Q. Now will you mark this grain feeder on the photograph?

A. Yes sir (witness does so). This wooden bulkhead is the one shown in the photograph.

Q. You said this wooden bulkhead—mark that with a B, will you please? You say one shows on the photograph; will you mark it with a B on the photograph?

A. (Witness does so.)

Q. Now, what is this thing here that I now designate with my pencil?

A. That is a ventilator.

Q. Is that shown on your sketch?

A. It is, sir.

Q. Where is it marked on your sketch?

A. Marked "Ventilator."

Q. Will you mark it "Ventilator" on the photograph, put a letter C?

A. Ventilator C (witness does so).

[fol. 105] Q. Now, you have here figures 5, 10, 15 and 20; what are those figures?

A. They are the frame spaces forward of the steel bulkhead at the forward end of the fire room.

Q. Now, will you indicate on the photograph whether or not the frame spaces show?

A. The frame spaces would be indicated on the side here between the frames.

Q. Do the frames show on the side there?

A. Yes, sir, and also at the deck beams.

Q. Will you mark the frames by the letter F so the Court will know what you mean by the frame spaces?

A. Yes, sir.

(Witness does so.)

The Court: Also mark on the plan the location of this wooden bulkhead; he has described it, but he hasn't marked it.

(It is so marked.)

Q. You have the sill piece here with the words "sill piece". Will you put a D on the sill piece to indicate where the sill piece was?

A. (Witness does so.)

Q. And then will you put a letter D wherever the sill piece was on your sketch?

A. I am marking it sill piece.

Q. I show you a sketch and ask you whether or not you made that sketch?

A. I did.

Q. And what does that sketch show?

A. That is the deck plan of the upper between deck on the steamer "Galileo".

Mr. Keating: We call that the shelter deck, our people do.

The Witness: This is not the shelter deck, this is the upper between deck; this is not the weather deck.

[fol. 106] Mr. Keating: We call the lower one the shelter deck.

Mr. Jones: We might as well conform to their nomenclature; that would be the shelter deck.

The Witness: This is not the shelter deck, Mr. Jones, this is the first between deck.

By the Court:

Q. What do you mean by the shelter deck?

A. The shelter deck is the weather deck.

By Mr. Jones:

Q. Now, Mr. Bagger, I think there is a slight cross purpose between your nomenclature and Mr. Keating's, and I am only too glad to assist them in any way I can, so we will have no misunderstanding as to what we are talking about. As I take it, the ship's officers described the spaces between the weather deck and the deck first below as the shelter deck space?

Mr. Keating: That is right.

Mr. Jones: And the compartment between the deck forming the lower part of the shelter deck space and the deck below the between deck space.

Mr. Keating: That is right.

Mr. Jones: And the space between the deck below forming the bottom of the between deck space and the lower hold, the lower hold?

Mr. Keating: That is correct.

Mr. Jones: Now, the various spaces are called the shelter [fol. 107] deck, the lower deck space and the lower hold.

Now, let us get it straight. He calls the top of the shelter deck space the weather deck. Now, do you call it the weather deck or the shelter deck or what?

Mr. Keating: We call it the weather deck.

Mr. Jones: Now, the deck which forms the bottom of the weather deck space, what do you call it?

Mr. Keating: The shelter deck.

Mr. Jones: And the deck which forms the bottom of the between deck space, he calls that lower between deck; what do you call it?

Mr. Keating: The between deck.

Q. Now, Mr. Bagger, in describing the plan, endeavor to conform to the nomenclature which the ship's officers use in describing the plan.

Mr. Keating: Well, let me see it first.

Mr. Jones: I offer it in evidence.

(Marked Libelant's Exhibit 12 in evidence.)

The Court: I don't know that Mr. Keating meant to have it offered in evidence; I think he meant to have it marked for identification.

Mr. Keating: This is the first time I have had a chance to look at it.

The Court: It will save a great deal of the Court's time.

Mr. Keating: I object only to the designations of what [fol. 108] was in the spaces which he has marked coal and cargo.

Mr. Jones: Here is something in which I think I can aid you, but I am not sure.

The Court: This last exhibit is marked in evidence, with the exception of the designation of coal and cargo.

Mr. Keating: That is all right.

Mr. Jones: And you agree that I may offer it in evidence?

Mr. Keating: Yes. It doesn't purport to show accurately the ship.

Mr. Jones: No, it purports to show where the cargo and coal was. I offer in evidence what is called the storage plan.

(Marked Libelant's Exhibit 13 in evidence.)

Q. Now, have you finished your description of the plan which you have before you, Mr. Bagger?

A. No, I have not.

Q. Will you complete that description of Exhibit 12?

A. This is a deck plan of the shelter deck, that is, the first deck below the weather deck of the steamship "Galileo", in way of the No. 2 and No. 3 hatches, and shows the positions of the steel bulkhead and wood bulkhead and passageways in way of No. 3 hatch, the ventilators in this compartment and also the wooden bulkhead in way of the 24 frame just aft of the No. 2 hatch.

Q. You have some measurements here, 30 feet 5 inches; what did that mean?

A. That means the ventilator was that far aft from the bulkhead.

Q. And you have the figures 5, 15, 20 and 25.

A. That is frame spaces forward of the fire room steel bulkhead.

[fol. 109] Q. The fire room steel bulkhead would be where?

A. It would be on the right hand side indicated by zero.

Q. Mark that.

A. (Witness does so.)

Q. What was the distance between the frame spaces?

A. 27½ inches.

Q. Now, the figure 5 would indicate that there were 5 inches between the frame spaces there and zero?

A. Yes.

Q. Figure 10 would indicate there were 10 frame spaces between there and zero?

A. Yes, sir.

Q. And so on?

A. Yes, sir.

Q. Now, I show you Exhibit 13, which is a stowage plan of the ship and also Exhibit No. 10, which is the sketch which you drew, and I ask you to show to the Court where what Mr. Keating calls the shelter deck compartment was on Exhibit No. 13.

A. That is this portion here. (Indicating.) This is the shelter deck space up here. (Indicating the top portion of the stowage plan.)

Q. Now, you have a compartment on your sketch which I will ask you to mark with the letter A, which you call upper between decks coal.

A. (Witness does so.)

Q. Does that same compartment show on Exhibit 13?

A. Yes, sir.

Q. Will you mark it with the letter A?

A. (Witness does so.)

Q. And what is written on the No. 13?

A. "Coal".

Q. Now, you have a compartment which you call lower between decks, with the word "Coal"; does that show there on your sketch?

A. Yes, sir.

Q. Will you mark it with the letter B? Mark both with the letter B.

A. (Witness does so.)

[fol. 110] Q. And then forward of the space you have marked with B; what is there?

A. Cargo.

Q. Does it show on the stowage plan?

A. Yes, sir.

Q. Will you mark that with the letter C?

A. (Witness does so.)

Q. And mark it with the letter C on your plan?

A. (Witness does so.)

Q. Now, in the lower holds in which you show cargo, what shows on the stowage plan?

A. Red winter wheat.

Q. That is cargo, isn't it?

A. Yes, sir.

Q. And the same on the other side?

A. The other side.

Q. I mean, it says red winter wheat; underneath D and E is winter wheat also?

A. Yes, sir.

Q. Mark it D and E.

A. (Witness does so.)

Q. Make similar markings on your plan.

A. (Witness does so.)

Q. Mr. Bagger, look at Exhibit No. 7, and I point to something that appears on the photograph. Will you tell me what that thing is?

A. That is a ventilator.

Q. Will you mark it with some letter, please, so that we will know what it is?

A. The letter V?

Q. V is all right. Will you describe that to the Court, just what that is?

A. That is a ventilator from the weather deck leading into the shelter deck space just forward of the wooden bulkhead, marked thereon.

Q. Now, can you describe how this wooden bulkhead was constructed?

Mr. Keating: I object to that, your Honor, if he is going [fol. 111] to describe the construction from having looked at the burned sill.

The Court: No, that isn't what he looked at. He examined the burned bulkhead, I presume.

Mr. Keating: He has this marked "Remains of a wooden bulkhead".

The Court: This isn't the one he is to describe.

Q. You saw the remains of that bulkhead, didn't you?
A. Yes, sir.
Q. Will you describe what it consisted of?
A. It consisted of vertical——

By the Court:

Q. Now, just one moment. The question is what did the remains consist of?
A. Yes, sir.
Q. I want you to describe only what you yourself know. Did you see the original bulkhead?
A. No, sir, except in so far as the portion of it which was remaining.
Q. I want you to describe only what you saw.
A. The remains of this bulkhead consisted of a portion of vertical planking on the starboard side of the shelter deck space. This planking was placed vertically and was of size about 2 inch- by 10 inches by about 8 feet.
Q. You saw those?
A. Yes, sir.
Q. How many were there?
A. Approximately as many as it would take to go across the vessel, your Honor?
Q. Yes.
A. About 20.
Q. Was some of it burned?
A. No, they weren't, no, sir.
[fol. 112] Q. No sign of fire on any of them?
A. No, not on that bulkhead. Over the crevices between the vertical planking had been nailed strips or battens.
Q. Did you see that?
A. Yes, sir; and a portion of a curtain was still existent on the forward side.

By Mr. Jones:

Q. That all appears from the photograph, doesn't it?
A. Yes, sir.
Q. You observed that yourself?
A. Yes, I saw that, and in fact, I directed the photographing of it.

Mr. Jones: I don't want to be tedious, if your Honor please, but in order to avoid any criticism of Mr. Bagger's testimony, I am going over it in narrative form with him, just what he did observe.

The Court: All right; make it as short as you can.

Q. Now, Mr. Bagger, you went on board the "Galileo", as you have told us?

A. Yes, sir.

Q. Do you remember the date you went aboard?

A. I think it was August 12th, 13th and 17th, 1927.

Q. Where was the ship when you went aboard of her?

A. At Gravesend Bay.

Q. Was she afloat or sunk or what was her condition?

A. She was lying afloat with a list of about 25 degrees.

Q. Now, will you describe the vessel to us?

A. May I refer to my original notes on this?

Q. Yes.

A. This vessel is of the shelter deck type with 3 steel [fol. 113] decks. Her side or shell frames are spaced 27 inches—I would like to remark that I said previously 27½ inches—I would like to make that correction—27 inches in the holds, lower between deck and upper between deck or forward deck spaces, but the deck beams for the two lower decks are on alternate frames, while the weather deck beams are on every frame.

Q. What is the construction of the bulkhead?

A. There is a bulkhead forward of the boiler room.

Q. What deck are you talking about now?

A. I am not talking about any particular decks.

Q. You mean all the decks?

A. Yes, sir. The bulkhead at the forward end of the fire room is of steel and extends from the tank top to the upper between deck.

Q. What do you mean by the tank top?

A. There were double bottom tanks—to the upper between decks.

Q. That is what Mr. Keating calls the shelter deck space.

A. Yes, sir. There is a steel bulkhead 12 feet forward of this which extends up to the weather deck, but in the lower and upper between deck spaces, that is, in the between deck and shelter deck spaces, it is of steel only in the hatchways, while at the sides or wings of these compart-

ments it is of wood covered with burlap and fitted with passageways. In the lower between deck compartment this steel bulkhead serves as the after part of the grain feeder for No. 3 hatch extending 5 feet fore and aft by the breadth of the hatch, and from the lower between deck to the upper between deck; there is a wooden bulkhead between the No. 2 and 3 lower holds. In the lower between deck there has [fol. 114] evidently been a wooden bulkhead at the 21 frame, forward of the boiler room bulkhead, as on the port side of the deck, there is a piece of steel remaining which is sawed off from a stanchion and there was a quantity of caked coal and grease at this space which indicated the presence of a bulkhead, as the two piles were banked up square on the forward edges. The upper between deck space, that is, the shelter deck space, had a light wooden bulkhead about 7 feet aft of the aft end of No. 2 hatch and the starboard portion of that is still remaining.

Q. At the time of your visit?

A. Yes, sir, and is photographs. That describes the vessel.

Mr. Keating: Now may I see the notes from which this gentleman read?

The Court: Yes, certainly.

(They are handed to counsel.)

Q. I think I have covered this, but look at Exhibit 4, and observing what I now point my pencil at, can you tell me what that is?

A. I stated before that that is a wooden bulkhead between the No. 3 lower between deck and the side bunkers with the passageways.

Q. Will you mark that with the letter B on that photograph?

A. We have had that letter before, Mr. Jones.

Q. Not on that particular photograph.

A. (Witness does so.)

Q. Now you have marked that with the letter B on Exhibit 4 indicating the bulkhead which is at the after end of the No. 3 lower between decks?

A. On the port side of the vessel.

Q. You observed that bulkhead, did you?

A. Yes, sir.

[fol. 115] Q. Will you describe its construction?

A. That was built up of horizontal planks and over that had been draped a curtain of burlap.

By the Court:

Q. You say "had been". Was the curtain there when you saw it?

A. Yes, sir, a portion of it. A portion of the burlap was still in place.

Cross-examination.

By Mr. Keating:

Mr. Jones: I would like for you to offer this whole thing in evidence as you have it now.

Mr. Keating: I am willing to have what he refreshed his recollection with.

Q. Mr. Bagger, with respect to this sill that you have been describing with coal caked on one side of it, and grease on the other——

A. No, sir, I didn't say that.

Q. Will you please describe how that was?

A. Aft of the sill piece remaining and also on the starboard side of this compartment, where there was no sill piece remaining, we found banked piles of caked coal and grease, the coal and grease being mixed together.

Q. Are you able to say which side of that bulkhead which you examined, the sill, the fire started?

A. No, sir.

Q. Now, this survey that you went down with—this report of yours was signed by Mr. Alfred E. Jordan and by a third gentleman, Captain McLennan?

A. Yes.

Q. Now, in this report you stated: "It is obviously impossible to ascertain from an inspection at this time [fol. 116] whether the fire started forward or aft of the wooden bulkhead at this place, the fire has been hottest forward of the bulkhead, but this may be due to the nature of the cargo. We note from the extract of the vessel's logbook dated at 4:35 P. M., August 28th, 1928, 'Smoke was observed coming from the forward starboard ventilator at No. 3 hold'. This ventilator leads to the between deck space described above and which contained coal. Our

investigation indicated that the fire could have had its origin in this space, but it is impossible for anyone to state definitely, from the physical evidence now available, where the fire originated. Nothing found by us, however, leads us to doubt the accuracy of the statement which we have quoted from the ship's log." Does that represent your views today?

A. Yes, sir.

Q. This is your copy of it?

A. Yes, sir, my copy.

Q. How many of these were there, Mr. Bagger? (Referring to the sketches.)

A. Three.

Q. Now, Mr. Bagger, in looking at Exhibits 10 and 12, do I understand that those positions of the bulkheads and the distances between them are absolutely drawn to scale?

A. Substantially so, yes, sir.

Q. Now, "substantially" won't do. Are they drawn to scale or not?

A. Yes, I would say they were.

Q. Well, what is the difference between "they were" and "substantially"?

A. Well, simply that a draftsman drawing mostly to scale is correct to a fraction of an inch, I will say that is correct say within an inch.

Q. You didn't take this space marked A and this space [fol. 117] marked B on Exhibit 10 from the cargo plan?

A. The cargo plan?

Q. Yes.

A. No, sir.

Q. You are sure that those spaces that you have and marked A and B on Exhibit 12, is the way that ship looked when you saw it?

A. Yes, sir, I will say that the cargo plan wouldn't give any indication at all of the size of the various compartments.

By the Court:

Q. Did you make the measurements yourself?

A. Yes, sir, and the frame spaces, and took the number of frames, and ascertained the numbers of the compartments.

Q. Aside from measuring the frame spaces what else did you measure?

A. Well, the height of the compartment.

Q. Did you measure that?

A. Yes, sir.

Q. What did you have, a tape measure?

A. No, a rule.

Q. What else did you measure?

A. Well, that is the customary way of measuring those compartments; the frames are equally spaced on the vessel. You simply ascertain the distance between them and take the number of frame spaces, that gives you the length.

Q. That doesn't give you the distance with relation to the width of the vessel?

A. No; I rather think I took them.

The Court: I think that covers your point. It isn't made to scale because he didn't measure the width at all.

Mr. Keating: I object, for they are absolutely wrong.

[fol. 118] The Court: He only measured the frame spaces and the heights, he didn't measure the width at all.

Mr. Jones: The width is immaterial. I don't think that question is going to come up at all, but this other question is quite a different matter. This witness did measure the fore and aft distances, the frame spaces with a rule, and counted them, and they are equally spaced, so with that measurement he had an accurate measurement of that compartment as to how long it was, and when I get an opportunity to question him again I will question him on that point, so there won't be any question about it.

By Mr. Keating:

Q. Now, Mr. Bagger, will you please look at this? Here is the upper between decks, that is the shelter deck?

A. Yes, sir.

Q. Here is the wooden bulkhead there?

A. Yes, sir.

Q. Here is the lower between deck. Now, you have got the wooden bulkhead in this position, showing the difference.

A. It is two different bulkheads.

Q. And what about the position of this bulkhead there right on the hold?

A. That is on the lower hold. I haven't that indicated on either of the deck plans, that is the reason I didn't put it on, but if you will notice this wooden bulkhead on Exhibit 12 is indicated on Exhibit 10 by this line marked wooden bulkhead showing the same distance on the No. 2 hatch. [fol. 119] This bulkhead here is Exhibit 11, showing the wooden bulkhead in the lower between deck space is indicated on Exhibit 10 by the word "bulkhead" just aft of the letter C. Those two wooden bulkheads were not in line with each other, nor were they in line with the wood bulkhead in the lower hold; they were stepped.

Mr. Keating: No further questions from me to this witness.

Redirect examination.

By Mr. Jones:

Q. Mr. Keating has referred to your report and read some paragraphs from it. Have you got that report there?

A. Yes, sir.

Mr. Jones: I offer the report in evidence, if your Honor please.

Mr. Keating: I object to it, your Honor.

The Court: It only would be proper if it modified or explained some part of what this witness has already stated. Unless you point out to me that it does so modify it, I will exclude it.

Mr. Jones: My friend has read from it, and I would like to have the whole report in evidence.

The Court: It depends on what it contains.

Mr. Jones: It doesn't modify his statement at all.

The Court: Does it explain it or have any relation to what he read?

Mr. Jones: It is all part of one statement, if your Honor [fol. 120] please. He has offered one part and I would like to offer the whole of it.

The Court: Unless you show me that it has some relation to what he has read into the record, I will exclude it.

Mr. Jones: He has read only a part of it, and I would like the preceding paragraphs to go in also. I will question the witness about it.

The Court: Well, you read them.

Mr. Jones: I don't want to take up any more time—I can question the witness about that and get the information that way instead of putting the statement in.

The Court: That is a naive suggestion—you can question him and if I think it relates to what has been put in I will let you put in, but if it doesn't relate to it, I won't have it in.

Mr. Jones: I will question him as to what he further said about that.

The Court: Which was the part he read?

Mr. Jones: He read the concluding paragraph.

The Court: I will have it marked in evidence with exception to the respondent—Libelant's Exhibit 14 of this date.

Q. Now, Mr. Bagger, you were questioned about the measurements which you made in the steamship "Galileo". Are you in a position to state whether or not the measurements you made you can testify to accurately as to the position of the wood bulkhead in what Mr. Keating calls the shelter deck space?

A. Those sketches are accurate within an inch.

[fol. 121] Q. You are positive of that?

A. Yes, sir.

Q. And you made those measurements, as I take it, by measuring the frame space and then counting the number of frame spaces to ascertain the position of the bulkhead?

A. Yes, sir.

Q. And how did you ascertain the position of the bulkhead? Did you see it with your own eyes?

A. Yes, sir.

Q. The position of the sill?

A. Yes, sir.

Q. And as shown in the photograph?

A. Yes, sir.

Q. And in the shelter deck space you saw the reverse of a portion of the bulkhead itself?

A. Yes, sir.

Q. And how did you ascertain the position of the bulkhead in what you call the lower between deck?

A. From the sill place and the banked piles of coal and grease.

Q. I want you to see some of these photographs and show to the Court exactly how you ascertained the position of the bulkheads.

The Court: If it is repetition, you needn't go over it with me.

Mr. Jones: I think it is an accurate way of representing the position.

The Court: I know what he did. If you want to amplify it, you can go into it, but if not, it is repetition.

Mr. Jones: I judge from a few remarks that your Honor made that your Honor seemed to have some doubt as to the accuracy of his measurements, and I want to clear that up, for I think they are absolutely accurate.

The Court: I understand exactly what he did.

[fol. 122] Q. You referred to frame spaces. Will you point to Exhibit 3 and show to the Court what a frame space is?

The Court: He has already done that.

Q. Do you know the spaces, that is, the distances between the frames on various ships are the same?

A. Yes, sir.

Q. How do you know that?

A. I tried it in a number of places.

Q. Checked it up yourself?

A. Yes, sir. The reason I did that is that frequently the frame spaces may be 27½ inches, and I wanted to be sure it was 27 inches, and I tried it in a number of places and ascertained it was 27 throughout.

Q. How many did you try?

A. 3 or 4, I should say, Mr. Jones; I don't recollect.

The Court: Do you dispute anything that this witness has said except perhaps the sketch?

Mr. Keating: No.

The Court: Then I don't think it will be necessary at this time to put on any other surveyors unless they can testify to more than Mr. Bagger has testified to.

Mr. Jones: There may be one or two points, if your Honor will bear with me, during the lunch hour, when I can go over it with them and then I can put them on, and I have some other experts that I want to put on.

The Court: I suggest that there doesn't seem to be much dispute as to what Mr. Bagger has said.

Mr. Jones: There are one or two other facts that I want [fol. 123] to bring out, if your Honor please.

The Court: Do the other surveyors know it and not Mr. Bagger?

Mr. Jones: Well, I don't know. They may wholly disagree with Mr. Bagger, and then over the lunch hour——

The Court: Then you want a recess?

Mr. Jones: Yes, your Honor, I may shorten it up a bit.

The Court: There is no use in making repetition.

Mr. Jones: Now, if your Honor please, I have copies of three wireless messages which were furnished me by my opponent, sent by the master of this ship to his owners here in New York, which I would like to offer in evidence.

Mr. Keating: We have no objection, but if he is going to put in a file of radio messages, I suggest that they ought all to go in.

Mr. Jones: I have no objection to their all going in. Whether we have a complete file or not, I don't know. Have you got a complete file of the radio messages——

The Court: Suppose we leave it this way: We will consider as marked in evidence all of the radio messages that either side wants put in.

Mr. Jones: It is quite agreeable.

The Court: And you can pick out anything you like.

(The radio messages are marked Libelant's Exhibit 15 in evidence.)

[fol. 124] The Court: Now, there may be lots of matters like radio messages and other things that we may save time on; if you will let me see what you want to put in, I think we can get on faster.

Mr. Jones: Mr. Keating has produced some plans and this deck plan I will probably offer in evidence, but this one you say should be so carefully treated, I suggest that we get it photographed and treat it brutally and return you your original. If Mr. Keating will show me what documents he wants put in——

The Court: He might do that, some of them anyway.

Recess until 2:15 P. M.

New York, November 6, 1929.

Met pursuant to adjournment at 2:15 P. M.

WILLIAM R. BAGGER resumed the stand.

By Mr. Jones:

Mr. Jones: Your Honor suggested that I not call my other surveyors to simply duplicate the testimony by Mr. Bagger; I am following your Honor's suggestion and putting one or two questions to him and then I will consider calling one or two surveyors.

Q. Mr. Bagger, you are a marine surveyor?
A. Yes, sir.
[fol. 125] Q. And you are familiar with ships?
A. Yes, sir.
Q. Are you in a position to say whether or not a bulkhead which is not watertight is also not airtight?
A. Yes, sir.
Q. Is a bulkhead which is not watertight also not airtight?
A. Yes, sir.
Q. Do you mean it is not airtight?
A. I mean if a bulkhead is not watertight it is not airtight.

No cross examination.

Mr. Jones: I offer in evidence a report made by the chief engineer surveyor for Lloyds Register of British and Foreign Shipping on the spontaneous combustion of coal, dated London, May, 1912.

(Marked Libelant's Exhibit 16.)

Mr. Jones: I offer in evidence the official instruction to surveyors issued by the British Board of Trade, Marine Department, December, 1922. That is published by His Majesty's stationers' office, to be purchased through any booksellers, etc., 1923.

Mr. Keating: I wish to reserve an objection to that.
The Court: All right.

Mr. Jones: You don't question that this is an original document, do you?

Mr. Keating: I want to check it up. My recollection is that this covers keels laid after 1923.

(It is marked Libelant's Exhibit 17 for Identification.)

[fol. 126] Mr. Jones: I offer in evidence a letter written by W. L. Magregor of the Board of Trade, dated the 24th of December, 1919. Have you any objection to that?

Mr. Keating: I haven't even seen that.

Mr. Jones: I showed it to you just now and asked if you had any objection to it. (Showing it to counsel.)

Mr. Keating: Is this the letter here?

Mr. Jones: This is the letter.

Mr. Keating: I object to this, your Honor; this is apparently a letter by Mr. W. L. Magregor; who he is, I don't know, your Honor——

The Court: It is competent, is it?

Mr. Keating: No.

Mr. Jones: I can prove it by my own experts, if your Honor please. I was simply trying to save time.

Horace C. Porter, being duly sworn and examined as a witness for the libelant, testifies:

Direct examination.

By Mr. Jones:

Q. Dr. Porter, what is your profession?

A. Consulting chemical engineer.

Q. And will you give the Court a brief account of your education?

A. I was educated at the University of Illinois, graduating there in 1900 in chemistry, and then took post-graduate work at Harvard University in chemistry, taking the degree of Doctor of Philosophy in 1903.

Q. In chemistry?

A. In chemistry.

Q. Then after you were graduated from Harvard, will [fol. 127] you give the Court an account of your experience in after life; tell the Court what you specially have become?

A. I spent 4 years in industrial laboratories of industrial

manufacturing concerns, and then entered the employ of the United States Bureau of Mines at their experimental station in Pittsburgh, working particularly on coal investigations, including work on distillation of coal and by-products, and also work on the storage of coal and spontaneous combustion. This involved a good many investigations of actual industrial cases of spontaneous hearing in coal piles and ships' bunkers, and after leaving the employ of the Government in 1915 I entered the employ of another industrial concern, The Koppers Company of Pittsburgh, builders and operators of by-products, coke oven plants; while in this connection I was called upon to look after matters connected with coal, the purchase of coal and the storage of coal, and a great deal of my work had to do with coal and its handling and treatment in their plants. At the time of the outbreak of the war I entered as a captain in the Ordnance Department with work in Washington on chemical supplies, the production of chemical supplies or explosives, and after the war I entered into consulting practice, specializing in fuel, in which I have been since that time.

Q. During your experience have you had occasion to investigate and form opinions as to the safe and unsafe methods of stowing coal?

A. Yes, I have.

Q. Are you the author of any pamphlets or publications respecting coal and spontaneous combustion in coal and methods of storage?

A. Yes, sir.

[fol. 128] Q. What pamphlets are they or other publications?

A. I published a technical paper, so-called, of the Bureau of Mines, No. 16, on Deterioration and Spontaneous Heating of Coal.

Q. Is that issued as an official publication of the United States Government?

A. Yes. And an article of mine on Spontaneous Heating was published in the proceedings of the International Congress of Applied Chemistry in 1912, and another bulletin of the Bureau of Mines, No. 132, was on the subject of Deterioration of Coal in Storage, bringing in matters of proper storage of coal and the losses in heating value. That is all on the subject of storage and spontaneous heating.

Q. Now, Dr. Porter, I have shown to you the interrogatories and answers, together with the annexed exhibits in this case, and I will submit to you the following question and ask you whether or not on the facts which I shall give you in this question you are able to form an opinion as to the comparative causes of a fire which broke out on the steamship "Galileo". Please assume the following facts: The steamship "Galileo" was a British cargo steamer operating between ports in the United Kingdom of Great Britain and Ireland and the United States. She was sunk on fire in New York Harbor at 4:50 A. M., August 30, 1926——

The Court: Is your other expert in the room now?
Mr. Jones: Yes, sir.
The Court: He ought to take a seat where he can hear.
Mr. Jones: Professor, will you sit here please?

[fol. 129] Q. (Continuing.) Her master reports on September 1, 1926, in a letter addressed to Messrs. Ellerman's Wilson Line, Inc., Hull, England, as follows:

"Dear Sirs: I have to confirm cable sent by the New York Office Company, advising 'Galileo' was sunk on fire in New York Harbor at 4:50 a. m. Monday, August 30th. The circumstances are as follows:

"We sailed from New York at 10:30 A. M. August 28th, and proceeded to Gravesend Bay and loaded eight tons of gunpowder, sailing from there at 12:50 p. m. At 4:40 p. m. when off Fire Island Light Vessel, smoke was observed coming from No. 3 Hold Ventilator, starboard side, and smelt as though wood was burning. As No. 3 'tween Deck and Shelter Deck was full of bunker coal shifted in New York during the week on top of about 160 tons of coal left from previous voyage, I came to the conclusion that spontaneous combustion had set fire to the bunkers and bulkhead between No. 2 and 3 Tween Deck on the spar ceiling. We took No. 2 hatches off and found no smell of fire in No. 2 Tween Deck, which contained spelter and about 8,000 boxes of lard in the after part. I decided to return to New York, and at 5:19 p. m. turned the ship around. I blocked off all ventilation to exclude air, concluding this best thing to do until our arrival back in New York when assistance could be obtained to shift coal to get at the seat of fire,

which meant shifting from 250 to 300 tons. I sent a wireless to Wilsonlyn New York 'Bunkers in No. 3 tween-deck on fire returning New York arriving Ambrose light vessel [fol. 130] 8:30 suggest bunkers discharged or shifted to No. 2 shelter deck' which was empty. After taking on Pilot on Board we anchored in Gravesend Bay at 1:10 p. m. I sent a wireless to Wilsonlyn New York 'Anchored Gravesend Bay suggest sending gang off to discharge bunkers now of fire'. The crew commenced getting up the 86 cases of gunpowder on deck; handy to discharge or throw overboard in case of emergency.

"At 2:00 a. m. received wireless message 'Labor will arrive as soon as possible.' At 10:20 coal laborers and Mr. Sanderson with tug Powder Lighter arrived; Gunpowder was discharged and we got under way, and proceeded up the river and anchored off Weehawken at 10:40 (about one mile above our Hoboken pier); meantime, laborers removing bunkers from No. 3 hold into side bunkers and on deck. At 5:30 laborers ceased working coal on account of smoke. As No. 2 Tween Deck by this time was getting hot, we commenced pumping water into No. 3 Shelter Deck from ship's bow. By this time laborers had shifted about 35 tons bunkers. At 6:40 sent wireless message for Fire Boat. At 7:20 Fire Boat alongside commenced pumping water into No. 2 Tween Deck, from which smoke was now issuing when hatches were taken off. At 8:00 p. m. crew working coal from No. 3 shelter deck. At 11:00 p. m. crew compelled to stop working the coal as dense smoke was by this time issuing from No. 3 Tween Deck. At 11:10 Fireman got hoses down No. 3 Tween Deck and commenced pumping water into ship. By this time ship had a 21° list to starboard and Chief of Fire Boat informed me that fire was growing and sent wireless to send another Fire Boat, also that it was advisable to beach the ship, as he was going to put two [fol. 131] six ft. pipes in the ship. At 11:55 I hove up anchor and beached the ship which lay about one-quarter mile away on the Jersey side of the river and was composed of soft mud. We took soundings which showed 17 ft. over the stem, 28 feet amidships and 40 ft. over the stern. By this time the ship had a 25° list.

"About 12:45 a. m. August 30th another Fire Boat came alongside and commenced pumping water into No. 2 and 3

Tween Decks. By this time dense columns of smoke were issuing from No. 2 and 3 Tween Decks, also flames. At 2:00 a. m. sent wireless message for two tugs to assist keeping ship on bank as by this time the first of the flood tide had commenced and the ship was still listing and slewing broadside on to the beach and inclined to slip off. Two salvage steamers arrived about 2:30 a. m. and took up position on port bow and port quarter and held ship broadside on to beach. Ship had now a list of 21°, having come up 5°. About 4 a. m. the ship commenced listing heavy to 26°. At 4:15 list 30° and 4:30 list 35°. Up to this time I did not think it possible that the ship would turn over on her beam ends, when suddenly she keeled over until the water flowed over the hatch combings and she laid on her beam ends at 4:50 and was submerged about 32 ft. starboard side under water heading about S. W.

"The crew saved most of their effects, but the Officers, Engineers and myself lost nearly everything as we did not realize, as I have stated before, that the ship would sink.

"The crew are leaving here tomorrow except the Chief Engineer, Chief Officer and myself, the W/U operator being transferred to another ship here.

[fol. 132] "I very much regret having to report this catastrophe, but I did my best under the circumstances for everyone concerned.

"I am dear sirs,

Yours obediently, —— ——, Master."

Entries on the ship's logbook, August 28th and 30th, as appear in the ship's protest, are as follows:

"Galileo"

"1926.

Aug. 28. At 10:17 A. M. this vessel left her berth at the Ellerman-Wilson Line Pier, Hoboken, with grain and a general cargo, for Hull, Newcastle and Antwerp. At 11:52 A. M., she anchored in Gravesend Bay for the purpose of loading powder. At 12:50 P. M. the anchor was weighed and the vessel proceeded to sea. There was a light to moderate wind with a slight sea, and the weather was fine and clear. At 4:35 P. M.,

smoke was observed coming from the forward starboard ventilator at No. 3 hold, and it was decided to put back to Gravesend Bay. At 8:30 P. M. the smoke increased in volume from the No. 3 starboard ventilator and the ventilator cowls were covered up. At 10:10 P. M. the vessel anchored in Gravesend Bay and a message was sent out requesting the vessel's agents in New York to arrange for laborers to [fol. 133] come and move bunker coal. The powder was then moved from the magazine to the upper deck.

Aug. 29. At 1 A. M. a wireless message was sent out for a fireboat to stand by. At 3 A. M. a fireboat was alongside, but was informed that assistance was not required. During the morning there was a fresh to strong W. N. W. wind and the weather was fine and clear. At 10:20 A. M. laborers came on board and commenced discharging powder from the upper deck to a lighter. At 10:55 A. M. the discharge of powder was completed and the anchor was weighed and the vessel proceeded to Weehawken with a pilot aboard. At noon the laborers commenced moving coal from No. 3 hold to side pockets. At 12:40 P. M. the vessel anchored below 34th Street Ferry, Weehawken. At 5:30 P. M. the laborers ceased working on account of smoke; they had previously been working at intervals. At 5:32 P. M. commenced pumping water into No. 3 hold from the ship's hose. At 6:40 P. M. sent a wireless for a fireboat and the ship's hose was pumping water into No. 2 'tween deck. At 7:20 P. M. the fire boat 'James Duane' came alongside and commenced pumping water into No. 2 'tween deck. Twenty-five minutes later the ship commenced to list to starboard and at 8 P. M. the crew commenced working coal out of No. 3 hold. At 11:30 P. M. the vessel had a [fol. 134] list of 20° to starboard. At 11:55 P. M. the anchor was weighed and the vessel was beached on the West Shore, near 34th

Street Ferry. The vessel then had a list of 25° to starboard.

Aug. 30. The fireboat continued to pump water into Nos. 2 & 3 holds. At 2:30 A. M. the salvage steamer 'Chapman Brothers' and the tug 'Alert' came alongside to assist in holding the ship on the beach, and at 2:45 A. M. a second fireboat arrived and commenced pumping water immediately. At 4 A. M. the vessel commenced to list further and at 4:50 A. M. she turned over on her beam ends, broadside on the beach."

The respondent, the owner of the "Galileo", admits the following facts in its answers to interrogatories annexed to the libel:

"Third interrogatory: (a) When was each lot of bunker coal in No. 3 'tween-deck put on board the 'Galileo'?

"Answer. One lot of the coal in No. 3 'tween decks was put aboard the 'Galileo' on or about June 30, 1926; the other lot was placed aboard on or about August 26, 1926.

"(b) What are the names and addresses of the persons who supplied and loaded that coal and how much did each supply?

"Answer. All coal was supplied by the Morrisdale Coal Company, 17 Battery Place, New York City.

[fol. 135] "(c) What kinds of coal were in No. 3 'tween-deck and what are their technical and trade designations or classifications?

"Answer. All coal in No. 3 'tween decks is believed to have been Morrisdale Miller Seam Coal, a bituminous coal.

"(d) Where did that coal come from?

"Answer. The respondent has no knowledge as to where the coal came from other than that it was purchased from the Morrisdale Coal Company.

"(e) Where was each such lot of coal loaded on the 'Galileo'?

"Answer. Each lot of coal was loaded on the 'Galileo' in the harbor of New York.

"(f) How was each lot of coal stowed with relation to the other lots of coal in No. 3 'tween-deck?

"Answer. The relation of the stowage of these two lots of coal was that the first lot of coal was scattered about in

No. 3 'tween decks, and the second lot of coal was stowed on top or alongside of the first lot.

"(g) How old was each such lot of coal?

"Answer. The first lot of coal had been on board since about June 30, 1926. The second lot of coal had been on board since on or about August 26, 1926.

"(h) In what enclosures, containers or holds had it been confined after its receipt on board the 'Galileo' and for what period of time?

"Answer. The first lot of coal had been in No. 3 'tween decks since about June 30, 1926; the second lot since about August 26, 1926.

"(i) What was the condition of the temporary wooden [fol. 136] bulkhead in No. 3 'tween-deck as to being watertight?

"Answer. The temporary wooden bulkhead was in good condition but was not supposed to be watertight.

"(j) What kinds and quantities of cargo were stowed in No. 3 'tween-deck forward of the temporary wooden bulkhead?

"Answer. The respondent is unable to answer this question definitely at the present time, but is endeavoring to obtain the information and will supply it as soon as it is received.

"(k) Was lard or other similar substance stowed forward of the temporary wooden bulkhead?

"Answer. Same as answer (j).

"Fourth interrogatory: (a) What was the extent of the fire on the 'Galileo'?

"(b) Exactly what parts of the 'Galileo' were burned by the fire and to what extent?

"(c) What was the nature and extent of the physical damage to her hull structure which the 'Galileo' sustained as a direct result of contact with the fire?

"Answer. The only information which the respondent has with respect to these interrogatories is contained in the survey report attached hereto in answer to the sixth interrogatory.

"Fifth interrogatory. Where was the 'Galileo' when the fire broke out?

"Answer. The 'Galileo' was proceeding to sea and was in the neighborhood of Fire Island Light Vessel when the [fol. 137] first indications of a fire were observed.

"Sixth interrogatory. Produce a copy of the entries in the scrap or rough deck and engine room logbooks of the 'Galileo' covering the period of the fire and the examinations and surveys afterwards made to ascertain its cause and extent.

"Answer. The scrap or rough deck and engine room logs were lost with the sinking of the vessel. The survey report is attached hereto.

"Seventh interrogatory. What persons first observed the fire and what did they see?

"Answer. By reason of the absence of the crew of the vessel the respondent is at present unable to answer this interrogatory. The information will be supplied as soon as it is obtained.

"Eighth interrogatory. What persons were present when the fire broke out?

"Answer. Same as answer to the seventh interrogatory.

"Ninth interrogatory. How long did the fire continue?

"Answer. Upon information and belief the fire continued until the vessel submerged on August 30, 1926, at about 4:50 A. M."

I also show you a stowage plan of the vessel, which is in evidence as Libelant's Exhibit No. 13, and three sketches which have been marked in evidence as Libelant's Exhibits 10, 11 and 12, showing the location of the bulkheads in what is called the shelter deck and the lower between decks. I also show you a photographic copy of a plan of the steam-[fol. 138] ship "Galileo", which has been produced by the other side.

Mr. Jones: I ask that this be marked in evidence.

(Marked Libelant's Exhibit 18 in evidence.)

Q. (Continued.) The plan of the ship which I now show you having been marked in evidence as Libelant's Exhibit No. 18, Mr. Bagger, one of the surveyors who examined the ship during August, 1927, testifies as follows:

"This vessel (meaning the Galileo) is of the shelter-deck type with three steel decks. The side or shell frames are spaced twenty-seven inches in the holds, lower 'tween-deck, and upper 'tween-deck (or shelter-deck) spaces but the deck beams for the two lower decks are on alternate frames while

the weather deck beams are on every frame. The enclosed sketches show the arrangement of the hatches, bulkheads, etc., forward of the forward boiler room bulkhead. This bulkhead is of steel extending from the D. B. tank top to the upper 'tween-deck. There is a steel bulkhead twelve feet forward of this which extends up to the weather deck but in the lower and upper 'tween-deck spaces it is of steel only in the hatchways while at the sides or wings of these compartments it is of wood covered with burlap and fitted with passageways. In the lower 'tween-deck compartment this steel bulkhead serves as the after part of the grain feeder for #3 hatch extending five feet fore-and-aft, the width of the hatch, and from the lower 'tween-deck to the upper [fol. 139] 'tween-deck. There is a wooden bulkhead between #2 and #3 lower holds. In the lower 'tween-deck there has evidently been a wooden bulkhead at the 21st frame forward of the boiler room bulkhead as on the port side of the deck there is a piece of the sill remaining which is tommed or shored off from a nearby stanchion. Also there is a quantity of caked coal and grease at this place about fifteen feet athwartship, one to three feet fore-and-aft and three inches to two feet high. On the starboard side there is also a pile of coal and grease about twelve feet athwartship, six feet fore-and-aft, and two to three feet high. These two piles are banked up square at the forward edges indicating the presence of a bulkhead, subsequently removed. The upper 'tween-deck space has had a light wooden bulkhead about seven feet aft of the after end of #2 hatch; some of bulkhead is still in place."

Q. I show you photographs which have been offered in evidence and marked Libelant's Exhibits 1, 2, 3, 4, 5, 6, 7, 8 and 9, and it has been stipulated between the parties that all the coal in No. 3 between decks was of the run of the mine coal. With the facts which I have given you, are you in a position to give an opinion as to the contributing causes of the fire which occurred in the coal in the No. 3 between decks?

A. Yes, sir, I am in a position to give an opinion on that.

Q. Now, will you give us your opinion and state what in your opinion were the contributing causes to the fire, and state it fully, please, Dr. Porter, so that we will understand exactly what you mean?

A. I would state as one of the contributing causes in my [fol. 140] opinion the fact that a restricted amount of ventilation, or it might be called ineffective ventilation, was established by the conditions on the ship, of air through the coal in the No. 3 lower between deck space. A certain amount of air was allowed to pass through the coal, but not enough air to thoroughly ventilate it and cool it.

By the Court:

Q. How do you judge how much air was allowed to go through it?

A. Your Honor, I cannot judge exactly the amount, of course, but by the conditions established by these photographs and the testimony of the surveyor, it is my opinion that the amount of air must have been restricted, that some air passed through the coal, but not a sufficient amount to keep it cool. I am judging of all that by the drawings and sketches that have been made and the statements of the surveyor as to his observations on the boat. A second contributing cause——

By Mr. Jones:

Q. Did you also take into consideration the interrogatories and answers which I read to you, which stated that this bulkhead was not watertight?

A. Yes.

Mr. Keating: Objected to. He is a well-qualified man and he has been asked to state what he took into consideration. I object to his being led.

Mr. Jones: I am not leading him, if your Honor please. [fol. 141] The witness, as your Honor can see, is a highly intelligent man, and I think any suggestion that this witness could be induced to say anything but the truth is improper.

The Court: It was a very suggestive question of yours.

Mr. Jones: I asked him if he did take it into consideration.

The Court: Please don't do it again. I will let it stand as it is. The fact was yours rather than his and that is what constitutes a leading question.

The Witness: My previous statement was, your Honor, that I based my judgment on the testimony of the ship's surveyor and on the sketches and photographs. The sur-

veyor testified as to the appearance of the bulkhead which he saw, or the remains of the bulkhead, and that was enough to indicate clearly to me that the bulkhead was not tight.

Mr. Keating: Well, now, your Honor, I move to strike the witness's answer out because that bulkhead was in the shelter deck and not in the between decks, and therefore this witness is taking into consideration a fact that was not put to him. The bulkhead in the between decks was entirely burned away, except the sill, and he bases his judgment on the bulkhead which was in another part of the ship and which was not burned. I move to strike the witness's testimony out.

Mr. Jones: I submit that the testimony is entirely proper, and ask that Dr. Porter be allowed to complete his [fol. 142] answer to my question, and then——

The Court: I will not strike out the answer, with exception to the other side, but on the other hand, I would like to know whether the point isn't a good one, that he did take into consideration something that was not in the hypothetical question. In my understanding of it he did. What is your understanding?

Mr. Jones: My understanding was that he did take into consideration the surveyor's testimony. I will ask him.

By Mr. Jones:

Q. Now, disregard the surveyor's testimony as you heard it, and take into consideration only the facts which I gave to you, as I stated them to you in the hypothetical question, and can you, on the facts which I stated to you, state an opinion, irrespective of what the surveyor stated, keeping in mind that you are only to use the facts which I stated to you in the hypothetical question; and if necessary, I will have the stenographer read it over?

A. I remember them and can state an opinion based on them.

By the Court:

Q. Is your opinion the same, based on solely those facts?

A. Yes, sir.

Q. Well, how does the fact that the bulkhead was not watertight—how did that decrease the amount of ventilation in the coal, decrease it?

A. Your Honor, the fact that it was not watertight did [fol. 143] not increase the ventilation, I did not mean to give that impression, I think I did not so state, if you will permit me. I stated that the presence of a bulkhead which would permit some air to penetrate caused a restricted amount of ventilation. In other words, the bulkhead restricted the ventilation, but did not entirely shut it off.

Q. Oh, yes.

A. I have not completed my answer.

By Mr. Jones:

Q. I wish you would complete it and enlarge on that further so we may all understand, Dr. Porter, why a restricted ventilation is dangerous.

A. The question as I remember, you asked me my opinion as the contributory causes of the fire.

Q. Yes.

A. And I was about to name a second contributory cause.

Q. Will you proceed and do that?

A. The second cause, in my opinion, was the stowing of a fresh supply of coal on top of or alongside of an old supply which had been in the bunker for two months. This is well-known to be a dangerous practice. The third contributing cause is the fact that coal in being placed on a pile or in a bin will segregate as to sizes, the larger sizes or lumps will roll down on the sides to the bottom of the pile, and in my opinion, when this space was loaded with coal the larger sizes or lumps rolled down to the temporary bulkhead and formed a section there of lumps or larger pieces, through which air could easily penetrate.

Q. Well, on what fact do you base that opinion?

A. On my own experience in handling coal and watching coal placed in storage.

[fol. 144] Q. What is meant by "run of the mine" coal?

A. Run of the mine coal is coal as it comes from the mine consisting of lumps and fine sizes mixed.

Q. In loading run of the mine coal into a bin or compartment have you ever had any experience with that as to what happens to the coal?

A. Yes.

Q. Will you tell the Court what your experience has been and your observations?

A. As to the way the coal behaves?

Q. Yes; did you make a special study of that in connection with the whole problem?

A. Yes, I did.

Q. Will you please tell the Court what was the result of your observations?

A. It is a general rule, and has been my experience, that when coal is dropped from a handling machine on to a cone-shaped pile, the larger lumps roll down from the peak of the pile to the sides, leaving the finer parts in the center. Those lumps and larger pieces in that way tend to form a section around the edges of the pile, through which air can easily pass. That was the point I believe that you asked me particularly?

Q. Yes. Now, Dr. Porter, you have stated that one of the contributing causes of the fire was the ineffective ventilation of the coal. Will you explain in detail why such ineffective ventilation was a contributing cause of the fire?

Mr. Keating: I want to know whether the witness has named all the contributing factors before another question is asked.

By Mr. Jones:

Q. Have you named all the contributing factors, Dr. Porter, or do you want to mention any others?

[fol. 145] A. I have none in mind I want to mention now; there may be other contributing factors.

By the Court:

Q. Just the two, you want to tell me about: First, ineffective ventilation, and second, the placing of new coal on the old coal, those are all?

A. The third one was the physical manner of placing the coal.

Q. That has only to do with the ventilation, hasn't it?

A. Yes.

Q. It is a subsidiary part of the ventilation, isn't it?

A. Yes, sir, related to the ventilation.

By Mr. Jones:

Q. Now I will repeat the question in which I was interrupted. You have stated that one of the contributing

causes of fire was the ineffective ventilation. Will you tell us in detail why that was a contributing cause of the fire and also describe the chemical changes which result from such ineffective ventilation?

A. The spontaneous heating of coal results from a slow accumulation of heat formed from the action of the air upon the coal, beginning at ordinary temperature, at room temperature. Spontaneous heating cannot go on in coal without the presence of air. A certain amount of air is required to cause this oxidizing process, the action of air upon coal produces it. Ordinarily combustion of coal in a furnace is a quick, rapid combustion, producing a great deal of heat in a short space of time, but the same oxidizing process goes on at ordinary temperatures very slowly, building up heat at a slow rate, but due to the same action, [fol. 146] the action of air, or the oxygen in the air upon the coal. Now, if the heat that is developed slowly by that process going on at ordinary temperatures is held in or allowed to accumulate without being scattered, or a rapid current of air, or other cooling effects, it increases the temperature of the coal continuously. Then the oxidizing action, the burning action, goes on still more rapidly as the temperature rises, until finally, if it is not allowed to escape, the coal takes fire, always supposing that a sufficient supply of oxygen is brought to it to keep the action going. A supply of oxygen means ventilation. We have to have air coming to the coal to carry on this oxidizing or heating process. However, if there is a large sweep of air through the coal, there is a large excess of air, that is not required entirely for oxidation, it carries the heat away and cools it. It has been proposed to thoroughly ventilate coal piles, coal stocks, by a great deal of ventilation through pipes, to keep it cool in that way, by a large supply of air sweeping all the heat away, but that has not been found practicable because it is difficult to get that air to all parts of the coal stock. You can't get enough air to every section of the coal stock to keep it cool enough; you can't be sure of always sweeping away every bit of heat that is formed in every part of the coal stock. Now, if a certain amount of air is allowed to seep through underneath the coal, a small amount sufficient to keep this oxidizing process going, but not enough to cool the coal, the spontaneous heating proc-

ess will go on and build up its heat until the coal takes fire; but if air is entirely excluded and there is no oxygen to carry on the process, consequently we can't have a heating without oxygen.

[fol. 147] By the Court:

Q. How does the fact of putting new coal near old coal make it still more dangerous?

A. That, your Honor, comes from the fact that coal, after it has been kept in storage several weeks, even for one week sometimes, depending on the kind of coal, becomes slightly warm, even though it has had surface ventilation enough to cool the surface; it becomes slightly warm, although not hot enough to burn, and therefore, when you put a new supply of coal on top of it, the warmth of that old coal is held in by the insulating effect of the new supply placed on top of it, and in addition to that the point where the two surfaces come together, the fresh coal supply and the old pile, is almost always a point where air can filter through. Those facts, the warmth of the old pile, not sufficient to burn it by itself, coupled with the air supply and the insulating effect of the layers of coal placed on top, keeps the heat in and allows it to build up, accumulate.

By Mr. Jones:

Q. Is it considered safe among persons familiar with the handling of coal to put new coal on top of old coal, Dr. Porter?

Mr. Keating: I object to this. This is a ship case.

A. No.

Mr. Jones: If your Honor please, here is a witness thoroughly familiar with coal, and coal on a ship doesn't behave any differently than anywhere else.

[fol. 148] The Court: Your question is incompetent; I sustain the objection on that ground. You can ask him more about the effect, and the Court will say whether it is competent or not.

Q. Dr. Porter, have you made a study of the matter of placing old coal on top of new coal?

A. No, I have not.

Q. You are familiar with the general principles in connection with it?

A. Yes.

By the Court:

Q. You have never studied that yourself?

A. I have never experimented by placing with my own hands the supply of new coal on top of old. I have observed the results of such a practice.

By Mr. Jones:

Q. You have observed the results of such a practice?

A. Yes.

Q. And you have observed the physical conditions from which such results flow, Dr. Porter?

A. Yes.

Q. And are you familiar with the general knowledge of that subject among persons who handle coal?

A. Yes, I am.

Q. Now, can you say whether or not it is considered safe by persons familiar with the coal business to put fresh coal on top of old coal?

Mr. Keating: Objected to.

The Court: It is incompetent, Mr. Jones. You can go further into details as to the effects of it, but as to whether it is safe or not is a matter depending on all sorts of cir- [fol. 149] cumstances unrelated to this case; it might be perfectly safe to do it under certain circumstances and not under others.

Exception.

Q. Then will you state to us what the physical and chemical effects to be anticipated are in the placing of fresh coal on top of old coal?

A. The physical effects are to cause the holding in of the heat of the old coal.

By the Court:

Q. Anything in addition to what you have told us? You have told us that part of it. Now, we don't want you to repeat, but if there is anything in addition, it will be interesting.

A. I think, your Honor, I didn't mention the chemical effects which consist of a more rapid oxidation as the temperature rises. The physical effect of drawing air along that passage or zone between the old coal and the new causes a chemical reaction or oxidation to go on more rapidly as the heat builds up and is held in by the installation of the new supply of coal.

Q. Now, what physical result is known to be expected from that condition?

A. Generally in such cases the coal continues to heat to the point of active combustion and fire.

Q. Do you know whether or not that fact is generally known by people who deal in coal?

A. Yes, I do.

Q. Is it generally known?

A. Yes.

Q. Do you know what is meant by "through ventilation"?

A. Yes, that is a term commonly used in connection with [fol. 150] coal storage. The term means, as I understand it, the drawing of air through a coal stock from underneath or the sides, so as to penetrate the pile of coal.

Q. Have you ever investigated actual cases of spontaneous combustion in large piles of coal?

A. Yes, I have.

Q. Describe to the Court some of the investigations which you have made.

A. I have investigated large storage piles of coal in the open air, piles of 100,000 to 300,000 tons, and have experimented myself by taking temperatures at various points in the pile and examining the physical character of the coal as to the lumps I find in different sections and the penetration of air through the pile. One of these cases was a large industrial plant at Milwaukee, Wisconsin, where 300,000 tons were stored, and another at Chicago. I have investigated cases of spontaneous fires on a ship, shipboard, and have observed and studied coal-bin fires in large power plants. One case, if I may go into detail, here in New York, a large power station, New York City power plant, where the bunkers for the boilers were over the boilers and the gates at the bottom of the hopper shed bunker were in some cases not entirely closed, allowing

a slow seepage of air through the opening at the bottom of this hopper, so as to cause through ventilation of a restricted amount of air, which, coupled with the slight amount of heat obtained from radiation from the boiler room, set fire to the bunkers in several cases.

Q. Are they ship bunkers you are telling us about?

A. This case I spoke of last was in a power plant in New York City.

Q. Tell us about ship's bunkers.

A. I investigated a case on a steamer of the Panama [fol. 151] Pacific Line while I was in the Government service where a bunker fired some coal stowed alongside of a steel bulkhead, which obtained a little heat from a pile of dry ashes or cinders on the other side of the steel bulkhead. The coal, being slightly warmed in that way and being lumpy so as to allow a certain amount of air to seep through it, took fire.

Q. Now, Dr. Porter, have there been many authorities published dealing with this problem of through ventilation?

A. Yes, there have been a great many papers published on the subject.

Q. And do you know what the conclusions reached in those various papers are?

A. Without exception——

Mr. Keating: Objected to. This witness can testify as to his own conclusions, but what somebody else concludes is another matter. I object as incompetent.

Mr. Jones: This is a matter of general knowledge, this matter of the through ventilation of coal. It is introduced in Lloyds Register of Shipping, in which they comment on the point, also the Board of Trade, and there are a hundred publications——

Mr. Keating: No, the publications——

The Court: Objection sustained.

Exception.

Q. Now, what is your conclusion, Dr. Porter, as to the matter of through ventilation in coal, as to whether or not it is a dangerous practice?

A. It is a dangerous practice and should be avoided in the storage of coal.

Q. Is the fact that it is a dangerous practice a fact gen-
[fol. 152] erally known among people who are interested in coal?

A. It is.

Mr. Keating: Objected to. It may be known in laboratory plans, but this is a matter he has to bring home to ship owners. I move to strike it out.

Mr. Jones: What is the common knowledge of persons dealing in coal is a fact. I have a witness here who has studied the matter on ships and who is entitled to state it.

The Court: I will permit the witness to state what is generally known, but I want him to say where it is generally known. The fact that it is not generally known among ship owners won't make the question incompetent. I think, but I would like to know whether it is in his intention to testify that it is known to ship owners or to men dealing in coal——

Mr. Keating: Or to college professors.

The Court. I will allow him to say if he will say where it is generally known.

A. Your Honor, I can answer your question positively without any hestitation that it is generally known among ship owners and shipping interests that through ventilation should be avoided in coal bunkers.

By Mr. Jones:

Q. On what observation do you base that answer?

A. On recommendations that have been made by ship-
[fol. 153] ping agencies, such as Lloyds of London, and the Board of Trade in London, and published in several places.

Q. How long ago have those publications been in circulation?

A. One set of regulations for Lloyds was published in 1912, and the Board of Trade, the English Board of Trade, I think was 1922.

Q. Are you in a position to say whether or not a between decks space such as is shown on the sketch, Exhibit No. 10, and marked B on that sketch, consisting of steel sides of the ship, top and bottom space consisting of steel decks, the forward part of the space consisting of a long watertight temporary bulkhead, the space having two ventilators,

each of which is located 23 feet 8 inches apart, on the wooden bulkhead, and with a wooden bulkhead at the after end of the space, is a safe place in which to stow coal—assuming that the between deck space forward of the space which is described as the ventilators, leading from the air space into such forward part of the between deck space?

A. Yes, I am in a position to state.

Q. Well, will you give us your opinion?

A. My opinion is that it is not a safe place to stow coal.

Q. What are your reasons for so stating?

A. There were ample opportunities there for partial ventilation through the coal. Just the condition that I have explained in previous answers as being dangerous to coal storage. The wooden bulkhead not being watertight was certainly not airtight, and therefore air could seep through the cracks, openings, between the boards, and the construction of a bulkhead to the roof of the compartment above the level of the coal would tend to restrict the drawing of [fol. 154] air off the coal so as to make it tend to pass through underneath the surface of the coal. In other words, the action of the ventilators to the upper deck, instead of having a free pull of air over the coal, would tend, on account of the bulkhead, to pull it more underneath the surface.

Q. Why is that true, Dr. Porter?

A. The presence of the bulkhead above the surface of the coal shuts off the free flow of air above the coal and therefore creates a suction, pulling air through the bulkhead underneath the coal surface. Now, the ventilators communicate with the space above the coal in that lower between deck compartment, and regardless of the fact whether the current or air were downward or upward through the ventilator, there would certainly be a current of air from that ventilator, inducing currents of air through the coal, passing between the small cracks in the wooden bulkhead.

Mr. Keating: We haven't had any cracks in this case yet. I object to that statement.

The Court: They have this, that a bulkhead that isn't watertight is not airtight, and that presupposes some kind of apertures, whether you would call them cracks or holes or interstices.

Mr. Keating: They might have been loose joints.
The Court: That may be.

Q. It doesn't make any difference whether we call it a crack or interstice, or whatever it may be called; so that is what you have to say?
A. Yes.
[fol. 155] Q. Had you finished your answer, Dr. Porter, when you were interrupted?
A. Yes, I had finished.
Q. Now, Dr. Porter, if we eliminate the placing of the new coal on top of the old coal as one of the causes of fire, can you say whether or not coal ventilated in the manner which has been described to you would still have been likely to have caused spontaneous combustion?
A. In *any* opinion it would have been, yes.

Mr. Jones: Now, Mr. Keating, I understand that you were to check up on this Board of Trade——
Mr. Keating: I am going to reserve my objection to that until I look it over.
Mr. Jones: Then, if your Honor please, I would like to have the opportunity of taking a deposition in London to prove that this is an official publication of the Board of Trade, this Exhibit 17.
The Court: Well, we will consider that.
Mr. Jones: I now formally offer Exhibit 17.
Mr. Keating: I object to it on my former grounds, and I have not seen it.
Mr. Jones: I will let you see it.

Objection sustained.

Q. I call your attention to this paragraph which I am reading from this document, and ask you whether or not——

Mr. Keating: I object to this witness being led by statements read out of a pamphlet.
[fol. 156] The Court: No, you can't do that.
Mr. Jones: I am not leading, if your Honor please. I am going to call his attention to a statement contained in that pamphlet.

The Court: You see, we don't know what the pamphlet is.

Mr. Jones: He has read it.

The Court: But so far as I am concerned it is a pamphlet you picked up on the street, written by some man who didn't know what he was writing.

Mr. Jones: I will tell you what I am going to do. Dr. Porter has testified that a compartment should have a ventilator both at the forward and after end. I want to show from this official document of the Board of Trade that it is exactly what they provide.

The Court: Isn't that exactly proving the contents of this thing?

Mr. Jones: Will your Honor give me an opportunity to prove it?

The Court: I will consider it when you make the motion. It will depend, Mr. Jones, on whether I think you used diligence ahead of time. Unless your opponent consents, it is immaterial to me whether the case is closed now or three months from now, when you get your depositions back, but on the other hand, it may be material to your opponent, and I have to consider what he might urge in objection, and I haven't considered that at all. Maybe I will decide in your favor on that point anyway.

[fol. 157] You have asked me if I will give you permission to take a deposition. I will endeavor to do the just and proper thing.

Q. Now, as I understood you, Dr. Porter, you referred to a question of the surface ventilation as well as to the through ventilation. Now, will you describe that to us a little more in detail?

A. Surface ventilation, as I understand it, means the cooling of the surface of a coal stock by a free sweep of cold air over the surface, to carry away the heat that may accumulate in the air above the surface of the pile, and in that way cool the surface.

Q. Can you say whether or not that is a recognized practice, that it should be so ventilated?

A. Yes, it is a well-recognized practice.

Q. Are you in a position to say whether or not, when the only surface ventilation is from ventilators which are in the after part of the hold, that is a sufficient surface ventilation?

A. From one ventilator only would be insufficient ventilation.

Q. Now, what I want you to answer me—I suppose there are two ventilators, but both in the forward part of the hold and not in the after part of the hold; would that be sufficient ventilation?

A. No.

Q. Why not?

A. Because it wouldn't draw air off all parts of the pile.

Q. Now, you have referred to the ventilation in the forward part of the hold. I direct your attention to the ventilator which appears in the after part of the hold, as shown on the photographs, especially photograph No. 3, where the bulkhead is testified to as being in the form as shown on that photograph, and constructed of planks which run hori- [fol. 158] zontally with the deck and with a burlap curtain over them, and I ask you to say whether or not that bulkhead would admit air into that compartment?

A. Yes, I would judge a bulkhead of that type, marked B on the photograph, would admit air to the compartment.

Q. In your opinion, is that a proper bulkhead for a compartment in which coal is stowed?

A. No, it is not.

Q. Why not?

A. Because of the fact that it is not airtight and would admit some air through the coal underneath the surface, causing spontaneous heating to go on.

Q. I have found one of my friends who corrected me now agrees with you that it is the after part of the hold. Does that make any difference in your answer?

A. No, it does not.

By the Court:

Q. You said in answer to one of Mr. Jones' questions that disregarding the fact that there was new coal put on or near the old coal, that there would be a likelihood of spontaneous combustion under the conditions that he described?

A. Yes, sir.

Q. Now, there would be a time limit involved there, wouldn't there?

A. Yes, there would.

Q. Spontaneous combustion would not arise immediately, would it?

A. Not immediately, in all probability.

Q. Can you give me some idea as to that time limit, how long that would take to develop?

A. I cannot say, your Honor; that would be indefinite, it is rather more——

Q. When you said there was any likelihood of spon- [fol. 159] taneous combustion you were entirely disregarding the element of time?

A. Not entirely, your Honor.

Q. Well, what time were you regarding, what time were you considering?

A. It would be likely, in my opinion, that spontaneous combustion might be set up in less than a week or ten days.

Cross-examination.

By Mr. Keating:

Q. Dr. Porter, I will ask you to assume that what you have been pleased to call the old coal was in the ship on the 26th of August, 1926, and as you said, had been there for a little less than two months, having been first put in the ship on June 30, 1926. That is in accordance with the way you understood Mr. Jones' question, those two facts, is that correct?

A. That is in accordance with my understanding of the answers to the interrogatories.

Q. Yes. Now, how much coal did you assume was in No. 3 between decks and how much additional coal did you assume was put in, in answering the questions to his Honor?

A. I assumed that a total of 160 tons of old coal so-called was in the vessel, as stated in your answers to interrogatories.

Q. And how much additional coal did you assume had been put in?

A. I made no assumption as to that. My memory does not serve me well enough to enable me to answer that; there may have been a statement on that, but I don't remember it.

Q. Would it make any difference if pounds were put in in your answer?

A. Yes, it could.

Q. How much has to be put in in order to affect your answer?

[fol. 160] A. Enough to cover the surface of a considerable portion of the old pile of coal; it is rather hard to be perfectly definite on that—exact, I should say.

Q. Now, Dr. Porter, will you assume that before the new coal was put in there were 160 tons of coal left over from the previous voyage and that the engineers went down there and the coal showed no sign of heating to the touch of the hand, and there was no odor of gas from the coal; and I will assume also that the fire was discovered on the 28th, between two and three days later. I will ask you on that assumption, have you ever known of a case of spontaneous combustion starting under those circumstances in that time?

A. I have known of cases very similar to that in which spontaneous combustion started. We never have exactly the same conditions in any two cases of coal storage, or coal; they are always slightly different, they can't be exact in every particular.

Q. I ask you first of all—give it to me as your opinion—if that coal was cool and there was no smell of gas, could that coal have been on fire by spontaneous combustion in two days?

A. Yes, sir, it could.

Q. Do you know of any case where that happened—give me the case where that happened of your own knowledge?

A. As I say, I cannot give you a case because the conditions are always slightly different; I couldn't give you an exact duplicate of any case.

Q. In giving me the answer to that question as you have, have you assumed all the other conditions, the small amount of air coming through the ventilator, and all that sort of business—have you made that assumption or have [fol. 161] you assumed some other factor which caused that quick firing?

A. I don't quite get your question. What is the question?

Q. I want to know whether in giving me the answer that that coal could have fired by spontaneous combustion, assuming it was cool and was giving off no gases from the 26th and to the fire on the 28th, whether you are assuming

in giving that answer the same conditions precisely, with the exceptions that I have given you, that you made in answering Mr. Jones' question?

A. Mr. Jones asked me a great many questions. I don't know which one you refer to.

Q. The first one, the long one, by which we were all bored to death; that is the one I am referring to.

A. I still don't understand the question.

Q. You are a little duller on cross examination than you were on direct.

Mr. Jones: I move to strike it out.

The Court: Strike it out.

Q. I am asking you to assume all the conditions stated by Mr. Jones in his long hypothetical question.

A. I understand that.

Q. With this change that I asked you to assume, that the so-called old coal was not heated, was not warm, and that it was giving off no gases from the 26th, and I ask you whether in your opinion under all those circumstances that coal could have been on fire from spontaneous combustion to such an extent that the whole ship was almost burned up on the 28th?

Mr. Jones: Now, if my friend is going to ask that question, let him put on his evidence so we can discuss facts [fol. 162] which are in evidence. Here the facts are not in evidence, and he is simply raising an assumption; it seems to me we are getting far afield if he is stating hypothetical questions here. It doesn't clarify the situation at all.

The Court: It won't hurt you. Objection overruled.

Exception.

A. I still say that it would be likely in my opinion to take fire. I will explain that if you will allow me.

Q. Yes.

A. The point that you mention about gas coming from coal is no indication of the fact that it is not warm. In other words, warm coal does not always give off gas; the coal might be slightly warm and not give any odor of gas. When I said in my previous answer to Mr. Jones' question as to putting fresh coal on to old, that the old coal was likely to be warm, I did not exactly mean to say it would

give an odor of gas. All that is required is a slight degree of warmth. The oxidation process goes on very much more rapidly with even a few degrees of heat. Also, if the coal were slightly warm, the old coal, in certain spots, and not in others.

Q. I am asking you to assume, Dr. Porter, that it was not warm.

A. In any spot?

Q. In any spot.

Mr. Jones: Do you mean inside as well as outside?

Mr. Keating: That the coal was not warm in any particular.

A. Even so, it is my opinion that it could have fired inside of two days.

[fol. 163] By the Court:

Q. Why did you tell me ten days? I asked you that question.

A. As I understood your question it was assuming that there was no old coal.

Q. I said entirely eliminating the question of old coal, being on new coal, eliminating that, and I asked if there was a time limit, and you said it would take a week or ten days.

A. Well, I beg your pardon if I misunderstood your question. As I understood your question it was eliminating the factor of an old coal supply, assuming that there was no old coal present. I understood you to say if the bunkers were loaded with fresh coal, without any old coal being left in them, could it have fired in two days.

Q. All right.

A. And I replied to that very likely not, but in my opinion it might fire in a week or ten days, without any old coal supply present.

Q. Now, if this coal were perfectly cool inside, the fact that it had been there for months, would that make it more ready to fire?

A. Yes, sir, in my opinion it would.

Q. Even though it was just as cool inside?

A. Yes, sir.

Q. Why is that?

A. My explanation of that involves a little more technical or scientific factors, but it is this: That coal absorbs

oxygen; it is well-known by scientific investigators that coal absorbs in its pores oxygen, which slowly acts on the coal surfaces of the particles. Now, as the old coal lies there in stock it is accumulating an absorbed supply of oxygen on the surfaces of all the particles. Now, when the fresh coal is piled on top of it, that accumulated oxygen stored on the [fol. 164] surface of those old particles gets in its work on account of being insulated by the overlying pile of new coal——

Mr. Keating: I thought your Honor asked him to regard only the old coal and not regard the new coal.

The Court: Yes, I eliminated all the old coal too.

Mr. Keating: Let me put your Honor's question to this man.

By Mr. Keating:

Q. Disregard the new coal and assume that what you call the old coal was perfectly cool coal, the same as any new coal would have been, and that it was not giving off any gases and that it was cool. Doe its age have anything to do with it under those circumstances, and would it be likely to spontaneously combust in two days, assuming no new coal was put in ther at all? Just deal with the old coal.

A. In my opinion there is a possibility that it might have.

Q. Have we got from a likelihood to a possibility?

Mr. Jones: I object to that. That isn't what the witness said. He said he was talking of a fresh supply being put on an old supply and now he is putting another question to the witness which the witness has answered, and counsel is adopting an attitude which I think is insulting.

Mr. Keating: Have I insulted you, Dr. Porter?

[fol. 165] The Witness: No.

Mr. Keating: Mr. Jones is the only man whose feelings are hurt.

The Witness: Do you want me to go a little further in my answer?

By the Court:

Q. Tell us what you have in your mind?

A. All cases of spontaneous combustion are subject to a great many factors. It is more or less of a game of chance

if you get everything just right, the condition is right, the factors that are required for holding in the heat and producing the heat, it is likely to go, to take fire; but there is more or less of a chance connected with it and no witness, no expert, can be absolutely positive and exact in his statements as to the surety of a fire taking place under assumed hypothetical conditions.

By Mr. Keating:

Q. Now you have said something that I agree with. Now, isn't it a fact that spontaneous combu-tion sometimes occurs in cases that are complete puzzles? Is that correct? Is it possible to investigate all these cases of spontaneous combustion?

A. Yes, sir, it is.

Q. Now, have they all been investigated?

A. No, I didn't say they had all been investigated.

Q. You said first, I have got a note here, spontaneous combustion results from slow accumulation of heat. Have I got you right?

A. I believe so.

Q. Well, don't you know so? Have I stated you correctly [fol. 166] or not?

A. That is my recollection of my answer.

Q. Now, what do you mean by a slow accumulation of heat? I would like you to put that into hours and minutes and days and months.

A. Well, that is impossible to answer.

Q. Well, we will start out with freshly mined coal—of course, I am talking about the conditions in this ship, I am assuming here the conditions that Mr. Jones tells about. Now suppose there was fresh coal, what you call fresh coal, put in there, how long would it be before this slow accumulation of heat resulted in a fire? I want minutes, hours, days, months, or if you prefer, years.

A. Well, evidently from the testimony that has been given in this case and your answers to interrogatories it required about two days in this case.

Mr. Keating: I move to strike it out.

The Court: Strike it out.

Mr. Keating: I ask that the witness be instructed to be fair with me. I have asked him a plain question, to start

out with fresh coal and the other conditions and to tell me when this slow process of heat——

The Court: It may be the witness misunderstood your question.

By the Court:

Q. Assuming the physical conditions of this boat as shown in the hypothetical question, and that fresh coal, freshly mined coal is put in to the extent of about 160 tons, how long would it take that to catch fire spontaneously?

A. Placed on top of the old?

[fol. 167] Q. No, 160 tons of freshly mined coal.

A. Well, that is impossible to answer; I can't give you any answer to that.

Q. Well, we don't want it in minutes or days either unless you can get it down to days; would it be a matter of a month or a year or a week?

A. No one could say as to that; no expert would venture an opinion as to the length of time required.

By Mr. Keating:

Q. Would he venture an opinion that it would take place in two months?

A. It might take place in less than two months.

Q. Would it be likely to take place in two months?

A. Yes, it would, in less than two months.

Q. Well, why did you tell me that no expert would venture to give an opinion to say how long it would take, or put any limit on it?

A. I didn't say that. I said no expert would venture an opinion as to the minutes, hours and days for a fire to start under those conditions.

Q. Well, can you be more definite as regards days? I don't want to pin you down to minutes, or if you like, months.

A. I answered your last question by saying that in my opinion it would take place in less than two months.

Q. How much less?

A. I can't say as to that.

Q. Now, Dr. Porter, you were talking about that ventilator leading into No. 3 between decks. Now never mind those papers for a minute. Where did that ventilator go

to? In answering Mr. Jones' hypothetical question will you kindly give me a description of the ventilator? I want you to tell me how big it was, where it led from and to, [fol. 168] and how you have assumed it was trimmed to the wind, and how much cubic air per hour it would likely displace in that compartment at various ranges of the wind? First of all, can you tell within one or two or three or four, how many ventilators you think there were in that hold?

A. In the hold of the vessel?

Q. In the compartment No. 3 between decks.

A. Two in this compartment, I am assuming.

Q. Where were they?

A. One on the starboard side and one on the port.

Q. How large have you assumed they were?

A. I had no knowledge of their size. I am assuming that they were about 12 or 14 inches in diameter.

Q. Would it make any difference in your testimony how big they were?

A. Within certain limits it would.

Q. What are the limits within which the difference would be made?

A. If they were less than 3 inches I would say that would make a difference.

Q. If they were less than 3 inches, and suppose they were more than 20 feet, would that make any difference?

A. In diameter?

Q. Yes.

A. Yes.

Q. Well, give me the range; you have answered a hypothetical question and given an opinion on it, and one of the questions is the size of the ventilators. What is the size of the ventilators?

A. I assume they were in the neighborhood of 12 or 14 inches, as I remember.

Q. And your answer is based on that assumption, is it?

A. Yes.

(Adjourned until Thursday, November 7, 1929, at 10:30 A. M.)

[fol. 169] New York, November 7, 1929.

(Met pursuant to adjournment at 10:30 A. M., present as before.)

HORACE C. PORTER resumed the stand:

Cross-examination continued.

By Mr. Keating:

Q. Dr. Porter, will you please tell me whether you have had any experience as an officer of a ship?

A. No, sir.

Q. You are a chemical engineer, is that correct?

A. Yes.

Q. You are not a combustion engineer?

A. I would qualify that answer by saying I have had experience in combustion engineering, fuel and combustion engineering.

Q. Have you ever been in the bunker of a ship?

A. Yes.

Q. When?

A. On several occasions; I can't give the exact dates.

Q. Recently? Are they all within the last couple of months?

A. Not within the last two months, no.

Q. How many ships have you been in, all told?

A. I can't state the exact number.

Q. Well, is it a large number or a small number?

A. It is difficult to say; the term large is comparative.

Q. Was it more than five?

A. Yes.

Q. Was it more than ten?

A. Yes.

Q. Was it more than fifteen?

A. No, I think not.

Q. Did you go on those ships in connection with this case?

A. No.

Q. Has Mr. Jones taken you aboard any ships?

A. No.

[fol. 170] Q. You are not a ship surveyor, are you?

A. No.

Q. Do you know anything particularly about ships, their construction, their operation?

A. I don't know just what you mean by particularly; I am not an engineer, I am not a ship engineer.

Q. Nor a ship surveyor?

A. No.

Q. Have you ever surveyed any ship?

A. No.

Q. Have you ever been called in by ship owners on consultation?

A. Yes.

Q. When?

A. In the case of a fire in the coal bunkers on the Panama Pacific Line, I was called by the owners of the vessel to investigate a case of fire in the bunkers.

Q. What was the name of the ship?

A. I can't remember the name of the ship.

Q. Where was she?

A. Lying in New York Harbor.

Q. What pier?

A. I can't remember that.

Q. You don't remember the name of the ship?

A. No.

Q. That is the only fire you ever investigated on a ship, isn't it?

A. The only one I was directly connected with.

Q. And you don't remember the name of the ship?

A. I will not be positive as to that, but it is my recollection it was the "Cristobel".

Q. You said it was the Panama Pacific Line?

A. Yes.

Q. Do you say the "Cristobel" is a Panama Pacific Line ship?

A. I won't be positive of that.

Q. You were consulted by the owners. What was the name of the owners?

A. It was either the Panama Pacific Line or the Panama Railroad and Steamship Company. It was some years ago; the exact name of the company has left my memory.

[fol. 171] Q. Now, the cause of that fire, as you stated yesterday, was the fact that some hot ashes—correct me, I don't want to misquote you at any time, Doctor, and if I say anything that is not in accordance with your recollec-

tion, will you correct me—you said yesterday the cause of the fire, as determined by yourself, was that some hot ashes were put on the other side of the steel bulkhead that separated the coal from the ashes?

A. That was one of the causes.

Q. Now, proximity to heat is one of the most common causes of spontaneous combustion in coal?

A. That is one of the causes, I will not say it is one of the most common.

Q. Now, in this power plant that you mentioned, the proximity of heat in that case was a cause of that fire, was it not?

A. I don't know just which case you are referring to; I have investigated a great many in power plants.

Q. I am talking about the one you testified to yesterday.

A. I don't think I referred to any one particular case yesterday.

Q. Yes. Yesterday you said "one case, if I may go into detail here, in New York, a large power station, New York City power plant, where the bunkers for the boilers were over the boilers and the gates at the bottom of the hopper shed bunker were in some cases not entirely closed, allowing a slow seepage of air through the opening at the bottom of this hopper." Do you remember that?

A. Yes, that was one out of several which I have investigated.

Q. There you mentioned heat, didn't you?

A. Yes.

Q. Did you mention any case yesterday in which heat was not involved?

A. I think I did not mention any yesterday.

[fol. 172] Q. You didn't mention heat in connection with this case under discussion here, did you, that is, proximity to outside heat?

A. You are referring to the case of the "Galileo"?

Q. Yes.

A. I don't remember whether I mentioned that in my testimony or not.

Q. Well, was it a contributing factor?

A. I don't know.

Q. You went over the ship's plan carefully with Mr. Jones; did you have any heat that was proximately near this coal, like boilers or steam pipes or hot ashes, or any of the things that you have described, in your experience?

A. Well, it is a difficult thing to say definitely, but I believe it is within the point of possibility that it might have been communicated to that coal from the boiler room space.

Q. How far do you think this place was from the boiler room?

A. I don't know exactly.

Q. And yet you are willing to say, not knowing that, that the boiler room might have been a contributing cause?

A. I know approximately from the sketches that have been submitted.

Q. How far was it?

A. Approximately, I should say, I should judge from the drawings it was between 20 and 50 feet horizontally from the boiler room compartment.

Q. Now, am I right that one of the most common producing causes of spontaneous combustion is proximity to outside heat?

A. No, I would say you are not, that it was one of the most common.

Q. Is it a common cause?

A. It is difficult to answer that without knowing what you mean by common; I think one of the causes.

Q. Well, there are a number of fires in ship's bunkers [fol. 173] that you have heard about, aren't there?

A. Oh, yes.

Q. Don't the authorities agree that those fires usually occur near heated parts of the ship?

A. No, they do not, to my knowledge.

Q. That subject was not mentioned?

A. They do not agree that it is one of the most common causes, no.

Q. Well, don't they agree that it is one of the common causes?

A. No, I think not.

Q. Is it an unusual cause?

A. It is a cause that is known to influence the starting of fire.

Q. Now, in this case that you have given us—the two cases that you have given us, one of the producing causes was outside heat, wasn't it, the power plant, and the hot ashes on the other side of the bunker?

A. One of the two cases I have mentioned that is true, but there are many other cases which I have investigated

where there was no heat involved, and in fact, I have known by a study of the matter of some hundreds of cases, more than a majority of the cases investigated, where no heat could have been involved from outside sources. I remember the study of a report of the British Board of Trade of 114 cases of fires on shipboard that took place in one year, from the actual reports of the masters of the vessels involved, and it is my recollection that in not more than three or four of those 114 cases was there any chance of outside heating, exterior source of heat.

Q. Now, in this particular case, that is, the "Galileo", do you name in addition to the three other producing causes that you mentioned yesterday heat, or may we disregard heat in this case, outside heat?

A. In this "Galileo" case?

[fol. 174] Q. Yes.

A. I think there is a possibility that it may have played some part, a small part, perhaps, in this case.

Q. Where did that come from?

A. From the boiler room, possibly.

Q. Well, where else might it come from?

A. There is a possibility that the old coal which had been left in the bunkers was somewhat warm, due to the warm weather——

Mr. Keating: I ask that that answer be stricken out, because I asked him about heat outside of the coal; we are dealing with outside heat.

The Court: I will let the record stand as it is.

Exception.

Q. Where else, other than from the boilers, could outside heat have got into either pile of coal on this ship?

A. This loading, as I understand the bunkering of coal, took place in the summer time, in the hot weather, and the steel sides of the ship were undoubtedly warm from the sun's rays; that heat of the sun might very well have been communicated to the interior bunkers through the steel bulkheads and the deck.

Q. Suppose I tell you that the average temperature during that period was 73 degrees, would your answer be the same?

A. Yes; heat of 73 degrees would be a serious factor, and besides that the heat of the sun playing upon a steel deck can raise the temperature higher than the temperature of the air.

Q. Now, what other special case of a ship other than this "Cristobel" did you personally investigate, you per-
[fol. 175] sonally?

A. I have no other in my memory just now; I won't say, however, that I have not investigated other cases.

Q. Hasn't your experience been mainly with shore situations?

A. Mainly, yes.

Q. Now, I have a note here, Dr. Porter, that you said that the purpose of surface ventilation was to cool the surface; am I right about that?—and I am talking about the surface ventilation of coal in confined spaces, not in the great outdoors.

A. That is one purpose of surface ventilation, yes.

Q. What is the other purpose?

A. The other is to clear the space from gases liberated from the coal, which would be a danger of explosion.

Q. To get rid of marsh gas, is that the idea?

A. Yes.

Q. Now, would you approve, Dr. Porter, of a ventilator, the surface of which, where it led out of the between decks, was the length of the compartment multiplied by the breadth of the compartment and divided by 1500?

A. I can't answer that, not being qualified as an expert in ship construction.

Q. Would you criticize ventilators the total surface area of which, where they led out of the between decks, exceeded the length of the compartment by the breadth of the compartment and divided by 1500?

A. No, I would not criticize it, not being qualified.

Q. Have you ever heard of that formula, Doctor?

A. No.

Q. Mr. Jones introduced in evidence here as Exhibit 16 a copy of the report of the Chief Surveyor of Lloyds Register of Shipping. You have read that document?

A. Yes.

Q. You read it a few days ago, didn't you, when Mr. [fol. 176] Jones got it from Lloyds?

A. Yes, and I have read it before.

Mr. Jones: I got it because Dr. Porter called it to my attention.

Mr. Keating: I don't think we need any such references.

Q. Page 16: "The surface ventilation now always provided, if the cowls are properly attended to, is a safeguard against the accumulation above the coal of marsh gas or other inflammable gases evolved from the coal, and that consequent risk of explosion; but it is a question whether this ventilation, supplemented as it frequently is by the opening of the hatches in fine weather, does not aid in producing heating of the coal and the risk of spontaneous combustion, by supplying to the body of the coal the limited quantity of air necessary to permit of the slow absorption of oxygen, which is the cause of the heating of the coals." Do you agree with that statement?

A. I agree that there is some question about it, yes, but I would say that if surface ventilation is properly carried out with a large enough volume of air and large enough space——

Q. Do you think they ought to have electric fans in there——

A. There is very little chance of its being effective.

Q. Is not the main purpose of the surface ventilation of coal in confined places to get rid of marsh gas?

A. I think not; from my experience the main purpose would be to keep the surface of the coal cool.

By the Court:

Q. Would you explain to me why it is important to have [fol. 177] the surface of the coal cool, cooler than the inside?

A. To carry away, your Honor, the heat which is slowly formed by oxidation of the coal; if the heat were not carried away from the surface the temperature of the coal would slowly rise until the point of burning is reached, just under the surface.

Q. Then the purpose is to make the interior of the coal

cooler—by cooling the surface you thereby tend to keep down the temperature of the interior?

A. Yes, for a short distance under the surface.

Q. Only for a short distance?

A. Yes, the conductivity of coal to heat is slow; it is a poor conductor of heat. The cooling effect on the surface cannot go very deep into coal because of the fact that coal is a poor conductor.

Q. Then why is it important to cool the surface if the middle part of your coal is unaffected, so far as temperature is concerned, by the cooling of the surface?

A. Because, your Honor, the proper way to store coal is to keep out any excess of air underneath, what is called through ventilation; therefore, there would be no accumulation of heat if properly stored underneath. But there is a slight development of heat on the surface, due to the action of the air at the surface.

Q. Oh, it is your thought that the surface would become warmer than the interior if coal were properly stored?

A. Yes, if there were not a large supply or a large current of air over the surface to keep it cool.

Q. Yes, I understand.

By Mr. Keating:

Q. Now, that paragraph I read to you a moment ago [fol. 178] contains this statement: "It would be safer"—and I am reading from Exhibit 16 of Lloyds report—"It would be safer as regards heating if M. Fayol's suggestion of hermetically sealing the holds could be carried out, arranging, however, provision for the escape of the marsh gas evolved during the voyage. If this method could be adopted care would have to be taken to thoroughly ventilate the surface and the vacant spaces in the holds before discharging the cargo. Also as the holds would soon become full of gas in all the interstitial spaces between the pieces of coal, special attention would have to be given to prevent leakage of dangerous gas through sounding pipes, bilge and deck pump suction pipes, &c. The care necessary, however, would not be greater than that habitually given to such matters in the cases of vessels carrying petroleum in bulk." Do you agree with that statement?

A. I agree with most of it, yes.

Q. Do you agree with that statement, that the best way would be to hermetically seal the coal; that is M. Fayol's suggestion?

A. I think it would be an effective way if it could be accomplished, the hermetically sealing; it is not a very practical matter, however.

Q. If that is true, then, what has surface ventilation got to do with it? For if it is hermetically sealed, there certainly would be no surface ventilation.

A. Surface ventilation is provided to take care of cases where hermetically sealing the bunker is not accomplished. If you had hermetically sealed bunkers it is very likely that fires would not occur from the action of the air at the surface.

Q. Do you know in your experience of any hermetically [fol. 179] sealed bunkers on a ship?

A. No, I do not; meaning by hermetically sealed the absolute exclusion of air?

Q. Right.

A. As in a chemical laboratory?

Q. Yes.

A. I do not know of any of that kind.

Q. Do you consider that practicable on board ship?

A. Interpreting the word "hermetically" as you just now used it, I wouldn't consider that practical, no.

Q. So you would always expect some air in a ship's bunker?

A. Well, that has to be qualified. Your question——

Q. Well, you are an expert, qualified; go ahead.

A. I have to understand your question thoroughly.

Q. Well, I will ask you, and if I don't speak plainly, I wish you would tell me: Do you know of any ship's bunker in your great experience that hasn't got some air—which I understand is H_2O—and that is about all I know about it——

Mr. Jones: H_2O?

Mr. Keating: I don't even know that, so I had just better stick to what I do know.

A. Your question was do I know of any ship's bunker in which there was no air?

Q. Yes.

A. I know of piles of coal, stock piles of coal, in which the air has been completely exhausted.

Q. I am talking about ships, not piles of coal; I am talking about ship's bunkers. First of all, do you understand the question that I have asked you?

A. Yes, I think I do.

Q. Well, then, please answer it.

A. I have not personally tested any ship's bunkers to try [fol. 180] to find by experiment that they were absolutely free of air.

Q. What you mean is that you have never been in an hermetically sealed bunker, is that right?

A. Yes.

Q. Dr. Porter, you testified yesterday about certain general knowledge in possession of ship owners on the subject of coal. Do you recall that testimony?

A. Yes.

Q. Do you know Mr. H. H. Stoek?

A. He is dead now; I used to know him very well.

Q. Have you read his pamphlet entitled "Fires in Steamship Bunker and Cargo Coal", issued by the Department of the Interior?

A. Oh, yes, yes.

Q. In making your statement that these matters were well known, did you base your statement at least partly on these pamphlets that have been issued?

A. Well, Professor Stoek's pamphlet is a compend of information he has gained from consulting a great many other authorities, and shipping men, and Lloyds Agency, and the British Board of Trade, and various other sources of information, and he has put them all together in a very convenient and impressive form, but his pamphlet is not based on any actual work of his own, experimental work.

Q. He was designated by the Department of the Interior to make this investigation, wasn't he?

A. Yes.

Q. I want to read you from page 26 of Mr. Stoek's report, "Spontaneous Combustion". "Although many of the principles underlying the spontaneous combustion of coal are shown by the preceding reports to have been formulated at various times during the past 30 years and by a number of different boards and committees, it is quite [fol. 181] evident that comparatively few of these connected

with the shipping industry have become conversant with them." Would you say that Mr. Stoek, after he had made that investigation, was in error in making that statement?

A. No, I would not say he was in error; he may have been misinformed as to the prevailing knowledge among shipping men on that subject. I wouldn't go as far as to say that he had made an error in his statement.

Q. May I take it that you are right that there is general knowledge and that Mr. Stoek, who was appointed by the Department of the Interior to make a special study of the subject, was at least wrong on the subject of spontaneous combustion?

A. I beg your pardon; was that a question?

Q. Well, I thought it was. Will you read it? (To the stenographer.)

(Question read by the stenographer.)

A. This pamphlet was written a number of years ago and the general——

Q. When?

A. I don't remember the date, but it was at least 4 or 5 years ago.

Q. Has knowledge progressed very rapidly since then?

A. Yes.

Q. Since you have started your investigation?

A. No, I wouldn't say that. There have been a number of reports issued, however, in Great Britain, in England, on Spontaneous Combustion in Cargoes——

Q. I am asking you a question. May I have the question read again? (To the stenographer.)

(Question read by the stenographer.)

[fol. 182] A. I can't answer that definitely until you explain what you mean by general knowledge.

Q. Well, you testified yesterday that there was general knowledge among the shipping industry on the subject of spontaneous coal and the various factors that you suggested as being very dangerous; am I right about that?

A. That is my recollection, yes.

Q. Now I ask you whether Mr. Stoek in 1923, when he said there was not such general knowledge was in error or not?

A. I don't believe Professor Stoek said that there was a lack of general knowledge among all shipping men.

Q. Well, let me read you again what he said: "Although many of the principles underlying the spontaneous combustion of coal are shown by the preceding reports to have been formulated at various times during the past 30 years and by a number of different boards and committees, it is quite evident that comparatively few of these connected with the shipping industry have become conversant with them."

A. Well, the term "comparatively few" is an indefinite one; he might have meant compared to the stowage of coal on land.

Q. Now, Dr. Porter, ship owners don't operate ships on land.

A. No; you misunderstood me, I think. I said compared to the general knowledge there is among people who store coal on land, the knowledge among ship owners may have been in his opinion comparatively little.

Q. Well, he says so, doesn't he?

A. He says so, yes.

Q. Now, just tell the Court on what you base your statement that this general knowledge which you say exists on land also exists among ship owners?

A. I based that partly on reports of the British Board [fol. 183] of Trade and Lloyds, which have been spread quite generally among shipping men, shipping interests, and on quoted reports of masters of vessels in which fires have occurred in which they admit that it was spontaneous combustion. The immediate case in hand, the report of the master of the "Galileo", was spontaneous combustion. He thought of it immediately when he saw the smoke coming from the ventilator. Apparently from his report he knew it was spontaneous combustion when he first saw the smoke. He took steps then to shut out all air from the coal bunkers, compartments, knowing apparently in his general knowledge as a shipping man that the accession of air to the under parts of the coal was a dangerous factor, and he closed the ventilators and hatches, and shut out the air as quick as he could. That I get from the reading of the master's report of this fire.

Q. And you are willing to say from the master's report that he says it was spontaneous combustion, that it was general knowledge of the shipping world?

A. From that and other reports of masters of ships in which fires occurred.

Q. Have you found the masters of ships thoroughly informed on the subject of spontaneous combustion in coal?

A. They have known quite generally of the dangers from it, and that it was a common occurrence; in fact, the one I spoke of in which I made an investigation, on the "Christobel,"—as I remember the name of the vessel,—they sent for me, particularly the owners and shipping interests sent for me at the Government's Bureau, knowing that I had studied spontaneous combustion. They immediately came to the conclusion, when the fire occurred in the coal bunkers, [fol. 184] that it must have started from the spontaneous combustion of coal.

Q. Isn't that what everybody thinks when there is a fire from coal, in your experience?

A. No, I wouldn't say everybody, no.

Q. Well, when fire occurs in coal isn't that the common assumption that is made, that it is due to spontaneous combustion?

A. It is a frequent assumption, but it is also the fact that a spark from a locomotive dropped into the coal will start a fire.

Q. What you mean is that the general assumption that it is due to spontaneous combustion is frequently wrong?

A. No, I don't mean that.

Q. It is frequently wrong?

A. No.

Q. It is always right?

A. No, it is not always right.

(Mr. Keating asks counsel for the photographs, the exhibits in this case, and then asks the Court to direct that counsel produce the photographs in this case.)

Mr. Ryan: We have them with the papers in the case, your Honor, and we neglected to bring them, but we have copies of them.

The Court: Well, use them. I suppose it would be inconvenient to identify these on the record, so just withhold that part of the examination until they come here.

Mr. Ryan: I thought those were the ones, your Honor, that were marked as exhibits.

The Court: Well, we all make mistakes.

Q. Dr. Porter, when you were talking about restricted ventilation, which you gave as one of the three producing [fol. 185] causes, what were the factors that you had in mind as making for restricted ventilation?

A. The factors are many that make for restricted ventilation.

Q. I only want those that you have considered.

A. The access of air, not necessarily by forced draft or pulling of air through the lower part of the coal, but simply free access of air to filter in or flow in to the under parts of a pile in a bunker or in a stock pile on land, is always considered a dangerous factor, the mere allowing of air to seep in the under part of the pile. Now I can give a detail as to practice——

Q. I don't want that——

A. —of rolling, stamping or putting a steam roller on a coal pile; that is done in many cases; the Philadelphia Electric Company, I know in the storing of coal rolls——

Mr. Keating: I object. I have asked this witness what factors he took into consideration.

The Court: He was elaborating.

Mr. Keating: I want on the "Galileo", not all these other things.

The Court: You didn't confine your question to the "Galileo".

Mr. Keating: Yes, I did. I will make that a question.

Mr. Jones: Will you withdraw the question put before and put a new one?

Mr. Keating: Yes.

Q. What factors did you take into consideration, physical factors did you take into consideration, in making your statement that there was restricted ventilation in No. 3 between decks on the steamer "Galileo"? I want just the [fol. 186] names of the factors and not an explanation of why they are so.

A. As I understand the question, you want me to state why I consider that there was restricted ventilation in the between deck spaces?

Q. Not at all. I want to know what factors you took into consideration, the coal, to give you an illustration, the coal, the bulkhead, and anything else that you took into consideration?

A. I don't get the meaning of the term "factors" in the way you use it. Factors mean an agency causing something, as I understand it; as you use the term "factors" there, I suppose you mean what caused the restricted ventilation on the "Galileo" through this bunker, is that right?

Q. All right, doctor; if you can't answer it, I will let it go.

Mr. Jones: If your Honor pleases, the witness can answer it.

The Court: Strike the statement out.

Q. You can't answer my question in the way I put it?

A. No, I don't understand it. I am not trying to evade the question.

Q. I have not said you were.

A. I will answer the question if you will explain what the terms mean in your question.

Q. Doctor, one of the things that you took into consideration in connection with your statement about restricted ventilation was the bulkhead, was it not?

A. Yes.

Q. That was one of the principal things, was it not?

A. Yes, one of the principal things.

Q. Now, the condition of that bulkhead was important, wasn't it?

A. Yes.

Q. Now, when you were handed up a bunch of photo- [fol. 187] graphs you were handed, among others, Exhibit 7. You will recall that you testified, that part of your answer was based on an examination of the bulkhead shown in that picture. Now I ask you, doctor, wasn't it in your mind when you answered the question that way and referred to that photograph, that you were judging the character of the bulkhead from that picture?

Mr. Jones: As your Honor will recall and the record will show, Mr. Keating objected to that form of answer on the part of the doctor and moved to strike it out, and then I asked the doctor specifically to disregard what he had

heard the surveyor testify to, and confine his testimony to the information which I gave him in the hypothetical question and to take into consideration the fact that the bulkhead was——

The Court: Mr. Jones, this is proper cross examination, to see whether he has done it or not. He can test out this man's thought upon every one of the questions.

Mr. Jones: I think Mr. Keating's statement of fact is not a correct statement of fact in connection with what the doctor said.

The Court: It is right in connection with the answer as first given, but the answer was subsequently modified.

(Question repeated by the stenographer.)

A. No, it was not.

Q. You didn't have in mind at all—it wasn't running in your mind at all that the bulkhead through which you [fol. 188] were describing the seepage of air was of the general character of the bulkhead shown in that Exhibit No. 7?

A. No.

Q. Well, why did you mention it?

A. I examined a number of photographs, there are other photographs as exhibits, and my idea of the character of the bulkheads in question was gained from another photograph, as well as this, and perhaps more than one other.

Q. Well, what do you mean by your statement that the character of the bulkhead was judged by pictures of other bulkheads as well as this? You are referring to Exhibit 7, are you?

A. Yes.

Q. You just told us that they didn't enter into youd mind at all?

A. Well, I mean by that that the idea I have gained of the ship's construction and the style of the bulkheads that were built—there are several of them, apparently—I saw in another photograph a different bulkhead from this.

Q. Do you tell the Court, Dr. Porter, that the form of bulkhead you were talking about was not judged at all from the photographs that you are holding in your hand?

A. Yes, I will say that.

Q. It was judged from the other photographs?

A. Yes.

Q. Show me which one.

A. Partly from the other photographs and from the descriptions that were read in the answers to interrogatories, or the surveyor's testimony. I can't remember just now which. There were other factors involved in the impression I gained of the bulkhead beside the photographs.

Q. Well, now, suppose you tell me what you think the bulkhead looked like, the bulkhead in No. 3, separating the coal from the cargo spaces.

[fol. 189] Mr. Jones: Which bulkhead are you referring to?

Mr. Keating: I just told him.

A. The bulkhead separating No. 3 between decks from the cargo spaces, as I understand you?

Q. Yes.

A. In my answer to this I don't want it understood that I consider that bulkhead alone was the one that influenced the cause of the starting of the fire.

Mr. Keating: I move to strike that out. I am asking him about the bulkheads, and he is starting to qualify about something else, and I am entitled to an answer. I ask that the answer be stricken out.

The Court: I will allow it to stand, with an exception to you. It is helpful to me to keep in mind just what he wants me to understand about it, and if he wants me to understand that that bulkhead was not the only place that he thinks air was seeping, I don't think that is objectionable.

Mr. Keating: It is objectionable if I am asking him about a bulkhead. I am trying to get from him a description of the bulkhead which he says was one of the principal factors. I can get to the other matters later. I am trying to find out from the witness what he says that bulkhead was like.

The Court: I am interested to hear what his idea is, also, and I didn't find it much of an obstacle. I will let it stand.

Q. Tell us what your idea of the bulkhead is.

A. My idea of the bulkhead between No. 3 lower between [fol. 190] deck space and the cargo space is that it is built in similar fashion to the one shown on the other side of the lower between decks space in one of the photographs.

Q. Which way was that built?

A. That was built of horizontal boards instead of vertical, as is shown in one of the other photographs, I think it is Exhibit 13, but I am not sure of that.

Q. May I take it that you assume that the bulkhead which we are talking about separating No. 3 from the cargo space was built of horizontal boards; is that correct?

A. I am assuming that, yes.

Q. Was that all, just the boards laid there, one on top of the other?

A. I can't say as to that. The photographs did not show any of that bulkhead remaining, that particular bulkhead between No. 3 space and the cargo space; it was burned out.

Q. Are you assuming that the bulkhead, before it was burned away, was horizontal layers of planks, one on top of the other, starting at the bottom and going up to the top of the next deck?

A. I am assuming that, but I have no direct proof of that.

Q. Now, are you assuming anything else on that bulkhead, are you assuming any covering or anything else, or is the description which you have just given us of horizontal planks, one on top of the other, the complete picture that you have in your mind of that bulkhead?

A. I am not assuming anything else as to its construction now except the testimony shows that there was a sill remaining at the bottom, the remains of a sill.

Q. Do you know what a dustproof bulkhead is?

A. Do I know what a dustproof bulkhead is?

[fol. 191] Q. Yes.

A. No; no, I do not.

Q. In considering this bulkhead that we have been talking about, have you assumed that this was a dustproof bulkhead?

A. No, I have not.

Q. Now, what have you assumed with respect to the coal that was on the No. 3 between deck side of the bulkhead?

A. I have concluded from the statements of the master of the vessel and the answers to interrogatories that 160 tons of old coal was left in the bunkers between decks, and that a large amount of new coal, fresh coal, was placed on top of it. That much is a conclusion from statements that have been presented.

Q. Now, have you assumed——

A. Excuse me, I haven't quite finished. Then I have assumed that this fresh coal was thrown in there, into that space, by shoveling, by men with shovels, and had been thrown on to more or less of a conical pile and the lumps had rolled down toward the bulkhead, accumulating some of the lump coal on the wooden bulkhead.

Q. You assume the fresh coal was against the bulkhead at the bottom?

A. Some of the fresh coal was against the bulkhead and possibly some of the old coal.

Q. And was the bulkhead entirely covered with coal on the after side of it?

A. I don't know as to that.

Q. Well, what did you assume?

A. There is no way of knowing. I assumed it was not entirely covered.

Q. How far up did you assume the covering went?

A. I didn't make any exact assumption as to the height.

Q. What did you assume was on the other side?

A. Cargo.

[fol. 192] Q. What kind of cargo?

A. It was stated in the interrogatories, I believe, that cases of lard, smelter bars, and slabs of zinc bars and smelter bars, or something of that sort, were there.

Q. Have you assumed that that cargo was against the bulkhead?

A. Not exactly; near it.

Q. How many ventilators did you assume were in the between decks?

A. Two; one on the starboard and one on the port.

Q. Are you sure of that?

A. That is my recollection of the testimony of the surveyors, and the sketches that were submitted.

Q. Do you mean to say that they showed No. 2?

A. I don't say positively that they did; that is my recollection.

Q. Now, where do you say the air would come from to get into No. 2—the air had to get into No. 2 between decks before it got into No. 3 between decks, did it not?

A. No, I won't say that; it might get in from other sources.

Q. Do you mean there were ocean breezes in the bottom of No. 2 between decks?

A. Not exactly ocean breezes, no.

Q. Do you mean there were some mild zephyrs down there?

A. I wouldn't call them that, no.

Q. Well, now, one thing is certain, that there had to be air in No. 2 between decks if any of it was to go through that crack in the bulkhead and into the coal, isn't that so?

A. No, I don't say that is certain; I wouldn't say that is certain at all. Air might get in there from other sources.

Q. Air get into where from other sources?

A. Into the coal in the lower No. 3 between decks.

Q. Now, I am only talking about the bulkhead at the moment. In order to go through the bulkhead between No. [fol. 193] 2 and No. 3 between decks, didn't there have to be some air in No. 2 first?

A. Oh, yes; yes, I will admit that.

Q. Now, where do you say that air came from in the No. 2? How did it get into No. 2, and what was propelling it into No. 3?

A. It didn't need any propelling; it simply needed to drift or filter through as the oxygen in the air in contact with the coal was exhausted; naturally to fill the void there the air would be slowly drawn through to replace what oxygen had been absorbed in the coal. Now, the air may have come down through the ventilators; it may have come from other parts of the ship.

Q. Down through the surface, down through the insulation, down into the bottom of the pile through the ventilators?

A. No, not down in the bottom of the coal directly from the ventilator, but you were asking me where the air in No. 2 cargo space came from. There was no coal in No. 2 cargo space. The air in that space may have come down through the ventilator into No. 2; it may have come from other parts of the ship. It wasn't necessary to have a rapid violent current of air sweep down there; it is simply drawn in by the natural draft, so to speak. It may have been a very slow diffusion.

Q. Now, so far as the restricted ventilation in No. 3 between decks is concerned, do you consider that most of the air that you claim got in there, or which got in there, came through the bulkhead?

A. Most of it came through the bulkhead, yes.

Q. Now, the amount that would come through the bulkhead does depend on the character of the bulkhead, does it not?

A. Yes.

Q. The larger the openings, the more air, is that right?

A. Yes.

[fol. 194] Q. And the smaller the openings the less air?

A. Yes.

Q. Also, the amount of draft has something to do with it, doesn't it?

A. Not very much, no.

Q. Now, how long are you assuming, in answer to these questions, that this restricted ventilation took place?

A. The restricted ventilation through the new stock of coal took place only during two days, from August 26th, when it was put on board, until August 28th, when the fire was discovered. But the restricted ventilation through the old supply of coal which possibly lay against the lower part of the bulkhead was taking place during the whole two months of the preceding voyage.

Q. In making that statement just now, when do you say that the hatch covers were put on the main deck?

A. I don't know when they were put on; I am not considering anything about that.

Q. That has nothing to do with restricted ventilation, in your consideration?

A. It may have something to do with it.

Q. Have you considered it?

A. No, I have not.

Q. This is the first time you have thought of it?

A. No, I will not say that. I knew there were such things as hatches and hatch covers and that there were probably some of them put on again in this case.

Q. Now, if the hatch covers had been off up to the morning they sailed, on the main deck, would you say that that place had been under restricted ventilation for two days, No. 3 between decks?

A. Which hatches are you referring to?

[fol. 195] Q. Main deck hatches.

A. No. 2 or 3?

Q. No. 3.

A. Now, your question is whether I would consider that had any effect on the restricted ventilation, is that right?

Q. Yes.

A. I would consider there was a possibility it might have some effect, perhaps not large.

Q. Doctor, do you take the flat position that fresh coal should never be put on coal that has been in a ship when the fresh coal is put in? Do you take that flat position?

A. Yes, I consider that a dangerous practice.

Q. You say that if a ship has any coal in her, irrespective of the time when it is put in, the old coal, she should not take on fresh coal on top of that what you would call the old coal, is that right?

A. Yes, that is right, unless the old coal remaining in the bunker is pulled forward so it can be used before the new coal can be worked out, in the beginning of the voyage, and used first.

Q. Let me get that straight. In other words, before you should take on fresh coal on top of old coal you ought to trim the old coal into position so it will be used before the fresh coal?

A. So it will be used quickly, at the beginning of the voyage.

Q. Well, then, you don't disapprove flatly of loading the new coal on top of the old coal, providing you can so arrange your space as to get rid of the old coal quickly? Have I stated that correctly?

A. I think it is a dangerous practice to put new coal on top of old coal.

Q. Won't you please answer my question?

A. Yes, I will, if I get the question.

Q. Well, read it to him.

(Question repeated by the stenographer.)

[fol. 196] A. No, I don't disapprove flatly, provided you can get rid of the old coal very quickly after starting the voyage.

Q. In other words, you think that the old coal ought to be put in a position to be used first?

A. Yes. In fact, that recommendation is made by shipping interests; in the reports on dangers from spontaneous fires in bunkers there is a recommendation specifically by boards of surveyors who have investigated cases, the Board of Trade of London, they have made that recommendation,

to pull the old coal forward and use it immediately, before the new coal.

Q. Well, of course "immediately" is a relative term; they can't use it all in the first day out if there is any amount of coal left, you realize that, don't you?

A. Oh, yes, yes, but it should be pulled forward, out from under the new supply of coal.

Q. How are you going to put fresh coal on top of it, then? Doctor, you told me, as I understood you, that you didn't object flatly to the storing of new coal on old coal, provided the old coal was trimmed forward so it could be used before the fresh coal; am I right about that?

A. No, I said more than that; that is not a complete statement of my answer.

Q. What else did you say?

A. I said provided it could be used very quickly after leaving port.

By the Court:

Q. What do you mean by "very quickly"? Within a day, an hour or a week?

A. Within a day, providing it can be gotten out from under the new supply of coal, within a day.

[fol. 197] By Mr. Keating:

Q. Will you point to me in any book in the world, or any authority where that recommendation is made?

A. Not where it is stated in one day.

Q. Nor two days either. Point to me to any place in the text book or any authority in the world that makes the statement that new coal, when it is loaded on old coal—that the old coal can be worked out in one day. I defy you to do that, Doctor.

Mr. Jones: I object.

The Court: Strike that out. Ask him some question.

Q. Point to me, Doctor, any text book, any authority whose written work makes the statement that you have made on the stand here on this subject.

A. Is this a question?

Q. Yes.

A. Well, I will point, if you will allow me to have the literature on the subject. I will point to the recommenda-

tion stating specifically that old coal must be trimmed forward and used.

Q. Before the new coal——

A. Before the new supply of coal.

Q. I agree you can find such statement. But I am asking you to point to me one statement in line with his Honor's statement of any authority which says that when new coal is loaded in connection with old coal, that the fresh coal should be set in such a position that the old coal shall be used up in one day; can you do that?

A. You want me to point it out in print?

Q. Yes.

A. I say I cannot, and you asked me——

[fol. 198] Q. Can you point me to such a thing?

A. I thought you meant the question to say "will you". If you said "can", I say no, I can't.

Q. Can you point to me any authority which says that you must use the old coal up in two days?

A. No.

Q. Three days?

A. No.

Q. Four days?

A. No.

Q. Five days?

A. No.

Q. Six days?

A. I can't point to any specific time, if that will save your questions.

Q. Right. Now, you know perfectly well, don't you, Doctor, that it is common practice in the steamship business to carry new coal on the old coal if the old coal is to be worked out in a short time?

A. No, I don't know that.

Q. Would you say that it isn't so?

A. No, I wouldn't go so far as to say that, either.

Q. Now, Doctor, would you favor a steamer which came in with some coal that was say two months old and showed no signs of heating or giving out gases—would you recommend to the ship owner to throw that coal away?

A. That depends entirely on what you mean by showing signs of heating. If you mean by going down in the bunker and placing your hand on the surface of the coal to determine whether you felt any heat on the surface, I should

say that is not a sufficient indication of whether the coal is heating.

Q. Well, let us assume, first of all, that the most critical examination of the coal that could be made by you, of the old coal, showed no signs of heat, and you were called in on consultation with the ship owners, and asked whether you should throw that coal away, would you recommend to the ship owner that he throw it away?

[fol. 199] A. I would recommend that he draw it forward so it could be used within a very short time after leaving port, even though it had showed no signs of heating to such examination as could be given.

Q. Now, Doctor, suppose the coal was actually hot, the old coal in No. 3 between decks, what should be done to that old coal before they put in the new coal—suppose that it is so hot that it burned the men's boots that were trimming it, what ought to be done with that coal? Ought there to be any fresh coal put in there?

A. No, there ought not to be any fresh coal put on top of that, certainly.

Q. It should have been taken out of the ship, shouldn't it?

A. It should have been put on the deck where it could cool off.

Q. Is there any question about that, Doctor?

A. No, certainly not.

Mr. Jones: Mr. Keating has cross examined Dr. Porter with respect to a pamphlet, I believe he called it Fires in Steamship Bunkers and Cargo Coal. May I see that?

Mr. Keating: Certainly.

Mr. Jones: I offer it in evidence.

(No objection.)

(The pamphlet is marked Libelant's Exhibit 19 in evidence.)

Redirect examination.

By Mr. Jones:

Q. Mr. Keating has directed your attention to a paragraph in Mr. Stoek's pamphlet, which appears on page 3, in which Mr. Stoek says: 'Scant information regarding coal fires on vessels can be obtained from vessel owners,

[fol. 200] marine agents, insurance and cargo adjusters and surveyors, and coal shippers." I direct your attention to Mr. Stoek's pamphlet on page 44, and I will read you what is stated here, and ask you if these statements are some of the things which you had in mind when you stated the subject was generally known to ship owners.

Mr. Keating: I object, that this is not proper re-direct examination. I object to Mr. Jones suggesting to this witness what he had in mind about general knowledge, and I suggest that Mr. Jones do not lead the doctor.

Mr. Jones: I will ask the doctor to look at——

Mr. Keating: I object.

Mr. Jones: I am within my rights in requesting to be allowed to finish my question without any objection.

The Court: Go ahead.

Q. I ask the doctor to look at Exhibit 19 and designate to the Court what passages, if any——

Mr. Keating: I don't want this man to look at the pages until I have an opportunity to object.

Q. In this book you had in mind when you made your statement with respect to the general knowledge of ship owners——

Mr. Keating: I object to that question as leading. If the witness can't state without looking at the book he [fol. 201] hasn't any right to state at all. Mr. Jones is suggesting to the witness that he look at the book and state what his views are on general knowledge. I object to it as improper and grossly leading.

Mr. Jones: Your Honor, Dr. Porter can show just what he based his knowledge on in regard to general knowledge in the shipping world, and I think your Honor would be convinced, and anybody would be convinced, after reading that.

Mr. Keating: The doctor is well able to take care of himself.

The Court: You cross examined him about his knowledge of the general knowledge in the shipping world as to these general conditions. I think it is permissible for him to show the full basis for his thinking.

Mr. Keating: I cross examined him on that book and asked him generally what he relied on—I asked him what

else he relied on. He didn't say what else he relied on, and Mr. Jones is suggesting that the doctor was a little weak, and he is getting him to read out of a pamphlet the things which he didn't tell me.

Mr. Jones: We are all anxious to get at the facts.

The Court: I sustain the objection in this particular case. I will permit you to ask this man whether he considered the statements your question assumes that he considered, the statement in this pamphlet. Now, that assumption is not justified. If you ask him whether he did consider it, thereafter we can get at the special parts.

[fol. 202] Mr. Jones: I will approach it in a little different way so it will be entirely unobjectionable to anybody.

Q. Please state the sources which you considered when you stated that the matter of placing new coal on old coal was a subject which should be known to all ship owners.

A. I remember very well reading this pamphlet of Prof. Stoek when it came out, because of my acquaintance with him and my interest in the subject, and I remember his referring in his pamphlet—I can't give you the exact pages without looking at it, but it is undoubtedly in there—his referring to the conclusions of a committee of Lloyds appointed to investigate spontaneous combustion on ships, also conclusions and recommendations by the British Board of Trade on the same subject, and he quoted those conclusions. The recommendations of the British Board of Trade were made a short time before the publication of this paper, and I had not seen them until I saw them in this paper; that was my first knowledge of them. They were made I think less than a year before this paper was issued, and Professor Stoek quoted them in here, and that was my first knowledge of this particular recommendation; but Lloyds Calendar had published some ten years before that, in 1912, their investigation on the same subject; and those are both referred to in this pamphlet.

Q. And were those the sources on which you based your statement as to the knowledge of this subject that it should be known to ship owners?

A. Yes; those were among the principal sources.

Q. Now, you were asked a number of questions by Mr. Keating as to ventilation. Will you say whether or not the [fol. 203] location of ventilators has any bearing on the subject of ventilation?

A. I am not qualified as a ship expert to answer that question exactly. I cannot say from my own experience that the location of a ventilator will have any large effect on the amount of air drawn through the coal. I would say in a general way, based on scientific or engineering knowledge, that it would not have a large effect.

Q. How about surface ventilation?

A. As to the effect of the ventilator on surface ventilation?

Q. Yes.

A. Well, I would think in that case, as applied to surface ventilation, that it would have some effect, that the ventilators should be placed right to draw the air properly over the surface of the coal.

Q. What do you mean by that?

A. It would be best, I should think, to be placed at one height of the space over the coal storage so as to draw the air over the entire surface as near as possible.

Q. Now, when Mr. Keating was questioning you you started to tell him about some bulkheads, and Mr. Keating then confined his question to one bulkhead. What bulkheads did you have in mind in giving us your answer as to the contributing causes for the fire?

A. I had in mind the two bulkheads, one aft and one forward of this between deck space where the fire originated.

Q. Now, Mr. Keating has asked you about the bulkhead and asked you to assume the method in which the bulkhead was constructed. I asked you now to assume anything with respect to how the bulkhead was constructed, but merely to assume that the bulkhead was not watertight, and I ask you under those circumstances to tell me whether or not you are in a position to express an opinion [fol. 204] as to the contributing cause of the fire?

A. Yes, I am in a position to express an opinion.

Q. What would your opinion be?

A. The opinion is that the bulkhead, the bulkhead in one case at least, at least one of these bulkheads was so constructed that air could penetrate through the crevices between the boards and through the burlap that had evidently been thrown over as a curtain. Now, the other bulkhead that was brought out before was destroyed by fire and we have no direct evidence, as far as I can see, that that par-

ticular bulkhead was constructed exactly in similar fashion to the one shown in the photograph.

Q. But I am asking you to disregard the method of its construction and simply assume that it was not watertight.

A. In that I should say that it was a factor in contributing to the fire.

Q. Why?

A. Because, if we assume the bulkhead was not watertight it was certainly not airtight, and that means that air could penetrate between the planks or in between crevices where water would penetrate; the bulkhead not being watertight it certainly allowed air to pass through.

Q. Then can you say whether or not it is material or immaterial whether the bulkhead is constructed of planks vertically or horizontally laid, or how it is built, provided the bulkhead is not airtight?

A. I should say it is immaterial.

Q. So the important factor then is what?

A. The filtration or penetration of air through the crevices in the bulkhead under the surface of the coal.

Q. In other words, that the bulkhead is not airtight?

A. Yes.

Q. Now, is it a material factor as to giving the exact [fol. 205] height of the coal in the bulkhead?

A. No, that is not material.

Q. You have been asked a great number of questions respecting what was published in books on this subject of old coal or new coal. Did you have in mind what was published by Lloyds on that subject?

Mr. Keating: I object to it as leading.

Mr. Jones: I don't want to lead him.

Q. What did you have in mind that was published on that subject, when you referred to the publications?

A. I had in mind the recommendations of Lloyds in their calendar, resulting from an investigation by a committee of Lloyds on the subject, and a report published by the surveyors of the Board of Trade of London on actual cases of fires during the years 1919 and 1920, on shipboard.

Q. What report was that?

A. I can't give you from memory the number of it, but it was published in 1921 by the British Stationery Office, His Majesty's Stationery Office, in London, a report of

surveyors of the British Board of Trade, outlining or reviewing 114 cases, if I am correct in my memory—114 cases of fires on shipboard during the years 1919 and 1920.

Q. Did any of these cases have anything to do with new coal on top of old coal?

A. Yes, they did.

Mr. Keating: I object to this man testifying as to the contents of the pamphlet.

Mr. Jones: You asked him if he had any authorities on the subject of old coal and new coal, and I want to bring [fol. 206] out what he knows about it.

Mr. Keating: I object as improper. I asked him if he could point to any authorities.

The Court: I sustain it.

Mr. Jones: You limited it to one day.

The Court: No, he didn't.

Mr. Keating: And he said he couldn't limit it.

Exception.

The Court: I give this assurance to either side, that wherever a formal objection is made there is deemed to be an exception in favor of the person ruled against.

Q. Now, Mr. Keating has asked you with respect to a number of questions about the old coal and new coal. I direct your attention to the hypothetical question which I read to you in the beginning, specifically to the master's report, in which the master stated that the new coal was placed on top of the old coal, and in his letter, which was written by the master to his owners shortly after he reached New York, the exact language being: "As No. 3 'tween deck and shelter deck was full of bunker coal shifted in New York during the week on top of about 160 tons of coal left from previous voyage, I came to the conclusion that spontaneous combustion had set fire to the bunkers and bulkhead between No. 2 and 3 'tween deck on the spar ceiling." I ask you whether under those circumstances you are in a position to say whether or not in your opinion that old coal had been properly trimmed in that compartment? [fol. 207] A. In my opinion it had not, no; according to the master's statement he placed the new coal on top of the old coal.

Q. And that is what you condemn?

A. I should condemn that as bad practice.

Q. You were asked a number of questions with respect to the time element in spontaneous combustion, and will you be good enough to tell me what you mean by the time element in spontaneous combustion?

A. As I remember the testimony given on that subject, the time element was brought in as a matter of estimation of an exact period of time within days or hours when a fire might be expected to break out, naming one or two conditions. Now, it is not practicable to set a time based on only one or two conditions in the coal stowage; it is necessary to know the full detail of all conditions pertaining there before anyone can even estimate approximately when the fire would be fairly certain to break out. However, one can say that there was great danger under certain conditions if even a few conditions are known. Now, with the conditions we have on this boat, the time element—you asked me to define what I mean by the time element—I would say that the time element in this particular case was fairly well defined by the number of conditions that were existent there.

Q. What conditions do you refer to?

A. The facility for penetration of air through the coal, through this bulkhead, from a cargo space which allowed air to enter freely on the other side of the bulkhead, and the presence of old coal underneath, which very likely it may have been cooled on the surface, was very likely warm or fairly hot down near the bottom, and the manner of loading the new coal on top of the old, so that lumps rolled next [fol. 208] to the bulkhead—all those conditions, particularly the penetration of air and the probability of some heat in the old coal, were bad, and would lead anyone who knew anything about stowing coal on ships, or spontaneous combustion on land, to expect a fire would break out in a short time. Now, the exact time element cannot be stated even in those circumstances within an hour or a day, but you can say that it was so dangerous a practice that there was every probability, and in all probability a fire would be likely to occur any time within—or it would be likely to occur in a time between one day and a month.

Recross-examination.

By Mr. Keating:

Q. Doctor, as I understood your answer to Mr. Jones, restricted ventilation in that hold didn't make any difference, whether you assumed there was a large hole or a large crack in the bulkhead, or whether it was a dustproof bulkhead, provided only that you assumed that it was not watertight; am I right?

A. No, I think not. I don't remember that my answer was as you have stated.

Q. Well, as I recall Mr. Jones' question a few moments ago, he asked you to disregard the construction of the bulkhead entirely, except that it was not watertight, and asked you whether anything else was material, and you answered no. Have I misquoted your answer?

A. No, I think that is correct.

Q. Is that still your answer?

A. Yes.

Q. In other words, it doesn't make any difference whether there is a large hole in the bulkhead at the bottom, [fol. 209] or a small hole, or whether the bulkhead is so constructed as a dustproof bulkhead, that very minute, if any, air can get into it?

A. No, I think you are leading a little too far away from my statement.

Q. Well, does it make any difference or not as to the amount of air that can get through the bulkhead?

A. Yes, the size of the holes makes a difference in the air.

Q. It makes a big difference, doesn't it?

A. Not when coal is piled against the bulkhead, no, I wouldn't say it makes a big difference, but when there is a pile of coal against one side of the bulkhead. The presence of a pile of coal or any solid material against that bulkhead would influence the passage of air through, and if it was a large hole the coal would be packed against that particular spot where the hole is, and it would then depend on how the air could penetrate through the coal. So beyond a certain limit the size of the opening, the holes in the bulkhead, would not make any great difference.

Adjourned until 2:15 P. M.

November 7, 1929—2 o'clock P. M.

S. W. PARR, a witness called on behalf of the libelant, being first duly sworn, testified as follows:

Direct examination.

By Mr. Jones:

Q. Prof. Parr, will you please give us an account of your education and your experience in connection with the study of coal.

[fol. 210] A. I studied at the University of Illinois, Cornell, and Berlin and Zurich, specializing in chemistry, and the chemistry of fuels. Since 1890 I have been professor of applied chemistry at the University of Illinois. My active work there in connection with fuels, began about 1896 or 1897. In the following years, bulletins to the number of five, I believe, were published pertaining to storage of coal and spontaneous combustion and matters of that type. The principal bulletin in that connection was published in 1912 and has been a rather standard of reference in the matter of contributing causes to spontaneous combustion, having been republished entire in the technical journals of England, Russia, and in this country, through a number of sources. I have been actually engaged in the study of fuels up to the present time.

Q. Are you a member of any chemical societies?

A. I am a member of the American Electro-Chemical Society; the American Society of Chemical Engineers; and the American Chemical Society.

Q. Have you been an officer in any of those societies?

A. I have. In 1928 I was president of the American Chemical Society.

Q. Are you connected with any journals dealing with coal?

A. I am associate editor of an English journal entitled "Fuel in Combustion and Practice". I am associate editor of a journal on "Fuel and Finance", published in New York. I am councillor having control of publication of the American Chemical Society.

Q. You were in court this morning when we referred to the pamphlet published by H. H. Stoek, when I found a

reference in that pamphlet to S. W. Parr, do you know if that is you that Mr. Stoek referred to?

A. It is.

[fol. 211] Mr. Jones: Following your Honor's suggestion, I shall not repeat verbatim the long hypothetical question that I put to Dr. Porter.

Q. And I will ask Prof. Parr if he was in court and heard the hypothetical question that I put to Dr. Porter at that time.

A. I did.

Q. I recall to you, Prof. Parr, that I asked Mr. Porter whether with all the facts stated in that hypothetical question before him, he was in a position to state what the contributing causes were to the fire which I described in that question; and I now ask you whether you are in a position to state what the contributing causes to the fire which I described in that question to Dr. Porter, were. Are you in a position to state—just yes or no?

A. Yes, I am.

Q. Will you be good enough to tell us what in your opinion was the contributing causes which occurred on the "Galileo", which I referred to in that question, keeping in mind that you are to base your opinion here on only the facts stated in the question. If you wish the question before you, and if you haven't it clearly in mind, I wish you would say so, so that we can refresh your recollection exactly.

A. As to all the facts that were in that question, first and foremost as an aid to making my mind up, I think I will say that heat is the result of chemical action; as a matter of fact, aside from friction, perhaps there is no heat generated that is not the result of chemical action. That is a fundamental and primary principle. I would say, then, because of that fact, if there was heat generated, there was chemical action going on. Now, the greatest source [fol. 212] of supply of chemical action that we have, is coal, and if, it has access to oxygen under proper conditions, we get heat, and we get this chemical action. The oxygen does not burn; it is the coal that burns. If we supply the oxygen to the coal under certain conditions, the inevitable result is heat.

Now, as I understand this interrogatory, there was heat. It is conceded there was heat evolved, generated. Then the only conclusion, the only obvious conclusion, is that there was chemical action somewhere; and the constituents entering into that reaction for the production of heat, might be the oxygen of the air supplying the action to the coal which generated the heat. Hence, if there was heat, my answer would be, obviously that there must have been some sort of chemical action.

Now, a contributing cause to chemical action of this sort would be quite a number of different conditions. First, the size of particles has a great deal to do with this action. That can be very well illustrated by supposing we have a lump of coal an inch square; there could be no chemical action started excepting on the surface of that lump of coal. If that lump of coal were crushed to fine particles, that surface would be multiplied a thousand times and these chances for chemical reaction would be multiplied a thousand times. Now, in a cube, the chemical reaction would be slow; that is, it would be inconspicuous, it would dissipate itself and the presence of heat would be so low that you might not detect it. Hence a contributing cause would be fineness of division.

[fol. 213] Q. May I interrupt you there for a moment: What is "run of mine coal," Prof. Parr?

A. A miner, when he loads out the room, cleans up the room with the sweepings, and everything that will add weight, because he is paid on a weight basis; and the cars coming out from his room, they will have all that he breaks down. Which is lump and fine stuff and mixed; that goes out, and without treatment, and without screening and without preparation in any way, into the shipping container, and is called "run of mine". Now, then, if that material has fine stuff in it, it is a contributing cause for this chemical reaction; and the lumps mixed in are a contributing cause, because they open up the space and admit of circulation of air; accessibility of air, then is a contributing cause, it must have access to the coal. So I would say that fineness or division, accessibility of oxygen, and temperature, is a very strong factor in bringing about or in speeding up this chemical reaction.

In a mass of coal, or any fine material, if it is at a certain temperature, the reaction will be a certain amount; if the

mass is at a higher temperature, the reaction will be correspondingly rapid. So that a contributing cause, if such a cause were present, would be the temperature of the mass, because that would be an acceleration of the reaction, if the temperature were high or low.

I think those are the main factors that enter into—that cover this matter of chemical reaction.

Humidity has something to do with it, the amount of moisture in the mass that is burning.

Temperature of ignition of one type of coal is higher than another. The temperature of ignition of anthracite is much [fol. 214] *m*igher than it is of bituminous coal. For bituminous coal it is much higher than for kindling wood. But the temperature at which an organic substance will burn, is the temperature at which it will continue to burn—the ignition temperature, I mean. Now, in the case of bituminous coals, it is not a very high temperature.

Q. What is the temperature of bituminous coal?

A. The older bituminous coals will take fire at about 400 degrees fahrenheit. The eastern bituminous coals will continue to burn if they are elevated to about 400 degrees. That is about the temperature of high pressure steam, provided only it has accessibility to oxygen. The younger bituminous coals of the mid-western field, have an ignition temperature, that is, a burning temperature, a starting temperature, of about 300 degrees. And so on down: Peet has a much lower point; certain types of wood, such as can occasionally be found in the forest, has still lower temperature of ignition; and so on through the list. The temperature of ignition is relatively low.

Q. Will you just continue answering the question, please, Prof. Parr? I want you to answer it in this way: Have you that hypothetical question in mind? I mean, to have you answer it without my interrupting you with questions, because I would like you to give your reasons to the Court.

A. Well, the fundamental reason, your Honor, is that here is evidently fire. There could be no fire unless the constituents for the chemical reaction were present: We assume the coal to have been there; there could not have been any fire without accessibility of oxygen. Now, the conditions governing the fire, are varied. They are not one thing, as I have already stated: Fineness of division, that is to [fol. 215] say, surface multiplication facilitates that action;

temperature facilitates it; accessibility of oxygen. Those are the main factors, together with a starting temperature. I think those are the factors, in my own mind, which enable me to say that I think I can give a reason for the contributing causes to the fire.

Q. Will you please state what reason you wish to give us, of the contributing causes—I want you to give us the contributing causes of the fire which I have described to you on the "Galileo".

A. It is a well known fact, and I have carried out many experiments verifying the fact, that freshly mined coal has a tremendous avidity for oxygen. For example, I have data of this sort: I took freshly mined coal and sealed it up in a jar with half the space filled with air and half the space fil-ed with coal, and after 24 hours I withdraw the air and analyze it. There is absolutely no oxygen left in that enclosed space, because of the avidity of the fresh coal for oxygen; it has created a vacuum to the extent of its removal of the oxygen from the air that was enclosed in that vessel. About one-fifth of the space is oxygen in the air; the other four-fifths being nitrogen, which the coal does not have any avidity for; it selects the oxygen and absorbs it. Very well; now, I open the jar to get the sample and allow it to fill itself wi-h fresh air, seal it again, and after 24 hours expire, the same thing has happened; the coal has the avidity for the oxygen to such an extent that it has absorbed all of it from the air. And in my experience, that can be repeated five or six or seven or eight days, for about seven times the volume of the coal will be absorbed as oxygen. Now, then, that established in our studies on storage of coal, a very important factor, and that is:

[fol. 216] Freshly mined coal having such an avidity for oxygen, must be so stored that either the heat that is generated in that process will be dissipated and the temperature kept down, or such a limited supply of oxygen can have access to the coal that this heat will not bring it up to the ignition temperature.

Now, then, there are other factors that enter into the case, and this peculiar property, which is recognized everywhere and well established for absorption of oxygen by freshly mined coal, it is very well known and very well established and must be considered where coal is stored or stacked in any form.

The Court: By "absorption", you mean the physical absorption?

The Witness: It starts out as a physical absorption, but it is a chemical union with the coal; the coal takes it up somewhat in the nature of a sponge taking up water; the water has been taken up, has been absorbed by the sponge. Now, the coal takes up oxygen in somewhat similar manner, though it is more of a chemical combination than a purely physical combination. The coal takes up the oxygen as a chemical—what the chemist calls a chemical complex; it does not increase the bulk of the coal, but it has taken up and holds this oxygen chemically, and in doing that a certain amount of heat is generated, and, just like any other—there can be no chemical reaction without heat, so just in proportion as the coal absorbs this oxygen, there is heat generated; it may be very low temperature, or very high.

[fol. 217] Q. Now I direct your attention, Prof. Parr, particularly to the fire which occurred on the "Gallileo" and to the facts stated by me in the hypothetical question, and I ask to tell me whether you can give us any information as to the contributing causes of that fire, taking into consideration the construction of the ship as I have described it to you in the hypothetical question, and I want you to base your opinion on those facts which I have given you in the hypothetical question.

A. Well, my answer would be consistent with what I have already said first: There was evidently heat generated. If there was heat generated, there must have been accessibility of oxygen to the coal. Now, as I understand the conditions on shipboard, there is nothing in those conditions which would prevent accessibility to oxygen, that is, oxygen getting to the coal, so that obviously the conclusion would be that that would be a contributing cause.

Q. I am directing your attention particularly to the "Gallileo" and to her construction as I have described it to you; can you tell us what features of the construction of the "Gallileo" you might have in mind in giving us your opinion that there would be accessibility of air to this coal?

A. As I understand the conditions under which the coal was stored, a retaining wall of wood was formed. If there was a retaining wall of wood, then there must have been

accessibility through that construction; I cannot conceive of a construction of wood in the ordinary sense of building bulkheads, which would not supply more or less oxygen, accessibility of oxygen through that construction, to the coal. Now, as to whether it would get enough oxygen or not, it seems to me would be answered by the fact that a [fol. 218] certain amount did get in, and that it certainly got enough to make a fire.

Q. I noted in a number of publications which I have read, an expression called "through ventilation". Do you understand what is meant by the expression "through ventilation"?

A. I think I do: The passage of air through a mass of coal—anything which would permit the passage or infiltration of air through a mass of coal, would be in a sense "through ventilation". That is to say, if there were a brace, in the construction, or if there were lumps of coal, or if there were segregation of sizes throughout the mass, as, for example, a zone of lump and no fine coal, and then another zone where was more fine coal than lump, those things would govern or affect the through ventilation; the more open the spaces, the more ventilation would be progressed freely through the mass, and the more those spaces were filled with fine coal, the voids would be cut down to the extent, and the through ventilation would be cut down. Now, if the through ventilation were sufficient in amount to equalize the heat generated, then the matter of rise in temperature would be controlled. If it is cut down—if the through ventilation is cut down any amount, then the heat generated will gain headway.

Q. Can you say whether or not if "run of mine" coal is placed in a compartment such as I have described to you, that is, a bulkhead built of wood which is not water-tight, and with a bulkhead built of wood at the other end, and with steel sides of the ship, and steel deck and with two ventilators in the aft part of the compartment, which, as I remember it, were about 23 or 25 feet aft of the wooden bulkhead at the forward end of the compartment, would [fol. 219] such a compartment as I have described be a proper and fitting place in which to store coal?

A. I think it would have dangers connected with it which would not make it a fitting place to store coal.

Q. What are the dangers connected with it, Prof. Parr?

A. Well, the chief danger is that it is exactly that condition which will supply enough oxygen to generate heat above that condition which would carry the heat away, and that is always a dangerous condition.

Q. That is the reason why you state it is an improper place in which to store coal?

A. It is.

Q. Are you in a position to state whether or not it is safe or dangerous to store freshly—new coal on top of old coal.

A. I should say that is a dangerous practice.

Q. Why do you say that?

A. Well, following the line of reasoning I have already given: It is practically impossible to store coal—a mass of coal against another mass, without regard to age, without the segregation of lump and fine stuff in such a way that there will be a channel formed for the passage of air. Now, that in itself has given a well established opinion that two piles of coal should not be brought together.

I have under my observation all the time, the storage of coal of this sort, and it is a positive injunction, that two masses of coal should not be allowed to come together, for the reason that segregation takes place in such a way that as the lumps roll down from each pile, they furnish a channel for the passage of oxygen, air. Now, there is a prejudice, a well established prejudice, against a new mass of coal coming in contact with an old mass. You can ascribe the same reason just as well, and say that it may not be due to [fol. 220] the fact that one is an old mass and the other new, but to the physical condition that you have encouraged, a segregation which allows for the passage of air. I think there are more deep seated reasons for keeping new coal away from old coal.

Q. What are those reasons, Prof. Parr?

A. I have already said that coal has a great avidity for oxygen, and it takes it on in a very large amount, and holds it somewhat tentatively, though chemically combined; and a new mass coming in contact with an old mass which is well saturated with oxygen, will supply that oxygen, will give it off, because of the avidity of the new coal for that particular element, and even though the supply may be rather limited to the new coal, here is a storage of a quantity in

the old coal which it is greedily seeking, and it constitutes a menace on that score, in my opinion, that is, the contact of old coal with the new.

Q. Now, there has been a suggestion in this case, although no facts have been brought forward here to substantiate it, that the old coal which I described to you in the hypothetical question, consisted of 160 tons, did not feel hot to touch for some time prior to the putting of the new coal on the old coal. Has that fact any significance in your mind?

A. Well, the fact that any coal mass is affected in its speed by the temperature, I think it has a very decided meaning, for example, in the transactions of the "Institute of Marine Engineers" for 1918, I am quite sure that is the date, Mr. Anderson suggests that the temperature of 90 degrees is a danger point.

Q. 90 degrees centigrade, or fahrenheit?

A. Fahrenheit degrees. Now, a mass of coal—and he says if it is 100 degrees it should receive immediate at- [fol. 221] tention. Now, 90 degrees to the hand on a hot summer day, would feel cool, and on a cold winter day it would feel warm, so that the matter of the 90 degrees is a relative factor, but it is a point which in these reports is stated to be dangerous.

Q. Is that your own opinion?

A. Yes; and I will say that Prof. Stoek—and I will say that Prof. Stoek's ideas are gleaned from a very wide lot of experience, he states the temperature—the danger temperature—might be higher than that; I think he states that a coal pile that goes up to 130 degrees, is dangerous. Now, the matter of what constitutes danger, is relative. Anderson says that 90 degrees is a dangerous point, and I agree with that, because it could not go up to 90 degrees without chemical action, and if it has chemical opportunity to go up to 90 degrees, it will go to 100 unless it is checked in some way.

Q. To put the matter shortly, then, Prof. Parr, may I ask you this question: Assuming that coal in the old pile—in other words, that the old pile of coal were so cool that you could put your hand on it in a summer day and you are not impressed with the fact that it is unduly hot, then you put in new coal on top of the old coal, can you say whether

or not that is a dangerous thing to do under the circumstances which I have just given you.

A. I should say it was a dangerous thing to do, for the two reasons as to the accessibility of oxygen, and the unknown factor of temperature, or indefinite factor of temperature, which you have not prescribed in your question.

Q. What do you refer to when you say "the indefinite factor of temperature"?

A. Well, supposing the old coal were 90 degrees. That would be dangerous, more dangerous than if the old coal [fol. 222] were 30 degrees, certainly; it constitutes a menace, greater in one case than in the other. Hence, it would be a very questionable thing to put fresh coal on top of old coal unless there were positive knowledge as to the temperature at which both the old and the new were being mixed.

Q. By that I take it you mean a knowledge much more positive than you could ascertain by putting your hand on the coal pile?

A. Positively.

By the Court:

Q. When you speak of old and new coal, do you mean newly mined coal, or coal that has been out of the mine for sufficient length of time to be called old?

A. I would call old coal, any coal that had been out and in contact with the air for—well, I should say six or eight weeks.

Q. And what would new coal be?

A. New coal would be as ordinarily—the time ordinarily consumed in transporting from the mine, which should not be more than 10 days.

Q. So really this is it, in other wo-ds, you are assuming, when you speak of new coal being put on old coal in the "Gallileo", you are assuming that the new coal was mined within 10 days?

A. 10 days or two weeks, yes.

The Court: There is no evidence of that, is there?

Mr. Jones: No.

Mr. Keating: None whatsoever.

Mr. Jones: There is no evidence as to when that first supply of coal was mined. But I will put a question:

[fol. 223] Q. The evidence which we have to consider and which I wish you to base your opinion on, Prof. Parr, and to exclude everything else, is this: That there was a quantity of 160 tons of coal that was in this compartment which I have described to you from June 30th up to the date of this fire. As I remember it, this fire occurred on August 28th. Then on or about August the 26th, an additional quantity of coal was placed in that same compartment on top of the coal which had been placed there on June 30th, the exact quantity of coal which was placed on top of the 160 tons is not given, but what the master says about it is as follows: "As No. 3 'tweendecks and shelter deck were full of bunker coal shipped in New York during the week on top of about 160 tons of coal left from previous voyage, I came to the conclusion that spontaneous combustion had set fire to the bunkers and bulkhead between No. 2 and 3 'tweendecks and the spar ceiling. We took No. 2 hatches off and found no smell of fire in No. 2 'tweendeck, which contained spelter and had 8000 boxes of lard in the after part. I decided to return to New York, and at 5:19 P. M. turned the ship around. I blocked off all ventilators to exclude air, concluding this the best thing to do until our arrival back in New York, when assistance could be obtained to shift coal to get at the site of fire which amount represented some 250 to 300 tons." Now I direct your attention to these specific facts, and they are all the facts which should be considered, and I ask you in answering the question which I am now going to put, to keep just those facts and those facts alone, in mind: Can you say whether or not it was a safe and prudent [fol. 224] thing to do, to place that coal which was put aboard during August, on top of the coal which was put aboard during June, having in mind that all of the coal was Morrisdale steam coal, and was "run of mine" coal?

A. I would say it was not a safe thing to do, not a prudent thing to do.

Q. Now tell us, keeping in mind those facts only, that I gave you, why?

A. The opportunity of segregation, in putting one mass of coal upon another, would constitute a menace, one menace.

The Court: May I interrupt? Of course, these things occur to me, and I am so ignorant of the science, that unless you straighten me out I may have misapprehensions.

By the Court:

Q. How would these segregations take place? Would it take place any more in adding several hundred tons of coal to a pile of several hundred tons, than by putting the whole quantity in on the one occasion?

A. If the added coal could be distributed on the coal that was already in the bunker, evenly, that would minimize the chance of segregation; but the fact is that when coal is piled, it rolls down the sides.

Q. It does that immediately, doesn't it?

A. It does that immediately.

Q. What difference does it make whether you put on the additional coal that same day or six weeks thereafter, if those lumps all rolled down to the sides?

A. Well, the new addition of coal has its own tendency to segregate along the line of contact with the coal that is already there.

Q. May I put it this way: Suppose you have 400 tons of [fol. 225] bunkers that you want to put into a compartment, and suppose the temperature remains just the same all the time, leave that element out, is there any more danger in putting in 400 tons the same day, or any less danger of putting all 400 tons in the same day, than in putting 200 tons in today and the next 200 tons in six weeks from now, leaving out the question, and leaving out of account, all limit of temperature?

A. Well, I would say that in putting all at one time, that whatever factors there were that would contribute to the oxidation, would be more and greater in amount than if it were divided over a period—a longer period—because whatever action there was which would generate heat, by that element of time, would have a chance to dissipate itself and not build up heat in the mass so greatly, as it would if it were all put in at once.

Q. The- you think it would be safer to put in 200 now and 200 tons six weeks from now, than to put it all in today?

A. Well, I would modify that a little: 200 tons at once might not be the same or have the same effect that 200 tons would added gradually all the time over the length of time, which would allow any heat which might be generated to escape, while the process was going on. That would be less dangerous than to put in a large mass *in* at

once in a heap, where, whatever heat was generated would be held by the non-conductivity of the coal.

Q. There is just one further question I want to ask: This matter of the segregation of lumps and fine stuff, that is not, or is it, done to a greater extent in putting in half of the whole mass today and another half six weeks from now, than in putting the whole mass in today, on just that matter of segregation alone?

[fol. 226] A. I think the total amount of segregation would be somewhat in proportion to the mass that was applied. If 400 tons were put in, there would be correspondingly more avenues of segregation than if it were 200 tons. Yes, I think the matter of segregation is somewhat in proportion to bulk.

Q. I have not made myself plain: You see, the situation here is, according to the hypothetical question, that there was a certain mass of coal in there. Now you say it had become segregated to some extent, the lumps on the side and the fine stuff in the center; and that after it had been in that condition for a while, some more coal, not necessarily newly mined——

A. A new supply?

Q. Another supply of coal was put in; and you say that the segregation as to the new supply would be the same as to the old mass; in other words, the lumps would go to the sides and that that was a contributing cause in this fire. Now, what I want to know from you is: Considering only that matter of segregation, would it be any more dangerous to have put your coal in in those two instalments than to have put it all in in one instalment on one day, just considering the segregation.

A. I don't think that it would add to the danger to put it in, in two instalments.

Q. I see. So that the only thing that adds to the danger, as I understand it, of the two instalments, is this matter of the temperature of the original instalment?

A. That is a very important matter.

Q. That is the only thing, isn't it? I am trying to clear up points in my own mind, you see. Is that the only thing?

A. If you grant that the accessibility or the availability of oxygen is the same throughout, I would think that this [fol. 227] matter of temperature then would be the chief thing involved.

The Court: All right; go ahead, and excuse the interruption.

Mr. Jones: I was going over to some questions along that same line.

By Mr. Jones:

Q. Can you tell anything as to the temperature of the interior of a pile of coal, by feeling the outside of the coal?

A. No.

Q. Can you say whether or not the temperature of the interior of a pile is as important as the temperature on the outside of the pile?

A. I think it is more important.

Q. Can you tell anything about the temperature of the interior of the pile by feeling the outside of the pile and walking around to smell gases?

A. I don't think you can excepting perhaps in this particular, if you can smell gases, you know the temperature is high enough to produce those gases. If you do not smell any gases, the temperature is not that high. But that is a rather far-fetched condition, and I don't think that the ordinary properties of sense would tell you anything about the temperature of the interior of the mass.

Q. Prof. Parr, are you familiar with whether or not it is generally known among persons who are dealing in coal, that it is considered an improper thing to place a fresh supply of coal on top of an old supply of coal?

A. That is common—I would say that is the common idea; I think it is well established that that would be accepted as a fact.

[fol. 228] Q. Now, then, I wish to direct your attention to the further fact: It is stated in the interrogatories as follows—and I will read you a number of questions and answers. This is interrogatory No. 3, sub-section F:

"How was your lot of coal stowed with relation to the other lot of coal in No. 3 'tweendecks?

"A. The relation of the storage of these two lots of coal was that the first lot of coal was scattered about in No. 3 'tweendecks, and the second lot of coal was stowed on top and alongside of the first lot.

"Q. How old were each such lot of coal?

"A. The first lot of coal had been on board since about June 30th, 1926; the second lot of coal had been on board since on or about August 26th, 1926.

"Q. In what enclosures, containers, or holds, had it been confined after its receipt on board the 'Gallileo', and for what period of time?

"A. The first lot of coal had been in No. 3 'tweendeck since about June 30th, 1926, the second lot since about August 26th, 1926."

Now, keeping in mind the facts which I have given you in the answers to the interrogatories which I have just read, can you tell me whether or not it was safe to place this lot of coal which was received on August 26th, 1926, on top of the lot of coal which was received on June 30th, 1926, and which was, as stated in the answer to the question F, "was scattered about in No. 3 'tweendecks"?

A. I think it would be considered bad practice to add [fol. 229] the new lot to the old lot under these conditions.

Q. Would you consider it unsafe is my question.

A. I would.

Q. Now I direct your attention specifically to the following interrogatory:

"What was the condition of the timber wooden bulkhead in No. 3 'tweendecks as to being watertight?

"A. The timber wooden bulkhead was in good condition, but was not supposed to be watertight."

That is the bulkhead, I now tell you, at the forward end of this compartment. Can you say whether or not the condition of the bulkhead as described in the answer which I have just read to you, was a contributing cause to the fire?

A. I think it would be so considered.

Q. What do you consider? I don't know what others would consider.

A. I would consider that factor a contributing cause: A bulkhead which would admit acquisition of air would be a contributing cause to the difficulty.

Q. Why do you say so?

A. From my knowledge of the behavior of coal and its appetite, so to speak, for oxygen; it would get oxygen through the medium of that sort to supply itself, I mean.

Q. Giving oxygen, how, to the coal?

A. By passing through the bulkhead.

Q. And would that be oxygen supplied to the surface of the coal, or to the body of coal, or how?

A. It would not make any difference to the coal where it came from, so it got it; but it would seem to me that it could get sufficient to constitute a menace, through the bulkhead.

Q. Now I call your attention also to the fact that there [fol. 230] was a wooden bulkhead in the after part of this compartment. Can you say whether or not the presence of a wooden bulkhead in the after part of the compartment, was a contributing cause to the fire?

A. I think it would be a dangerous condition, whether a contributing cause to that particular fire or not would depend upon whether the other conditions were of a type to speed up the reaction to the point of ignition.

Q. Assuming further there were two ventilators in this compartment, located about 23 or 24 feet abaft of the wooden bulkhead at the forward part of the compartment, that is, you have the two wooden bulkheads which I have described, one in the forward part of the compartment which is described as being a "temporary wooden bulkhead in good condition, but not supposed to be water-tight," and then a wooden bulkhead con*con*structed of pieces of wood which were horizontal, in the after part of the compartment, can you say whether or not, in your opinion, such a compartment was a safe and fit place in which to store coal, and assuming further that there was burlap over the aft wooden bulkhead.

A. I would not think that it was a safe place to store coal.

Q. Can you say whether or not the condition of the compartment which I have described to you, was a contributing cause to the fire which I have mentioned to you in my hypothetical question?

A. I think that it should be so considered.

Q. Is that your opinion?

A. That is my opinion.

Q. Now, then, as I take it from what you have said, there are three contributing causes to the fire.

Mr. Keating: I object to any leading or suggestions.

[fol. 231] Mr. Jones: Very well; I was just going to sum up what the professor said. What he said is quite clear.

The Court: I would prefer to have him do it, and I will ask you to go ahead, and give an exception to you, Mr. Keating.

Mr. Keating: Yes, but let the professor sum it up, and not Mr. Jones—that is what I object to.

The Court: I want to make sure that I have the professor's idea on several of these questions.

Mr. Keating: I would like to have them too, but I don't want Mr. Jones' view.

The Court: All right, then, but I want the professor to sum up.

Mr. Keating: I agree on that.

Q. Now, professor, what I want you to do, I was going to state that question to save us all a little time, but in order to conform with my friend's wishes——

Mr. Keating: Not to lead the witness.

Q. —I will ask you to state what are the contributing causes to the fire which occurred on the "Gallileo", keeping in mind the various factors which I have called to your attention.

The Court: Just enumerate them without describing them.

Q. (Continuing:) The physical conditions which I have called to your attention.

A. I would say, first, the retention of the coal mass by a wooden bulkhead. I would say, second, the physical con- [fol. 232] dition of one mass of coal against another, and of run of mine coal, which would give accessibility of oxygen to the coal. I believe the matter of fineness of division is a contributing factor. I believe that the fact of the old supply in contact with the new supply, would also be a contributing factor. I believe also the possibility of a temperature—of a starting temperature—is a contributing factor. An initial temperature, in the storage mass or masses, might be a contributing factor. I think that summarizes the various conditions.

Mr. Jones: You may cross examine.

Cross-examination.

By Mr. Keating:

Q. Mr. Parr, have you had any personal experience with ships?

A. I have had a limited experience with ships.

Q. Do you know anything about ship construction?

A. Not as an engineer, no.

Q. You have never been a ship surveyor?

A. I hardly know what you mean. I have surveyed cargoes of fuel for the purpose of finding out facts, mainly about the fuel, but not about the ships.

Q. Have you ever personally investigated any bunker fires on board ship?

A. I have not.

Q. Have you ever been in a coal bunker?

A. I have.

Q. Have you ever been on board a steamer where they carried coal similar to the place that Mr. Jones has described to you in his hypothetical question?

A. I have.

Q. When was that?

A. About the year 1912.

Q. Much of the same kind of a place, was it?

A. It was specifically a bunker ship for the transporting [fol. 233] of coal, whether it was mechanically constructed in this same way, I doubt, because it was a coal ship, and not a general cargo ship.

Q. Have you been aboard any other ship besides this coal carrier?

A. I have been a passenger occasionally on shipboard.

Q. Did that take you down into the engine or bunker section?

A. Naturally I gravitated toward the fuel part of the ship.

Q. What ship was that?

A. I cannot quite recall the name of the ship I was a passenger on in 1900.

Q. It is a long time ago.

A. It was a German Lloyd Line ship.

Q. In giving your opinion on the causes of this fire, you

start off with the fact that there was a fire; am I right about that?

A. Yes, sir.

Q. And therefore you know and have told us that oxygen is necessary, that there must have been enough oxygen coming from somewhere to have caused that fire?

A. Yes, sir.

Q. Now, you have told us, as I recall your statement, there were two principal factors—the availability of the supply of oxygen, and the temperature of the mass. Did I understand you right on that?

A. Those are two of the factors, yes.

Q. Two principal factors?

A. Two principal factors.

Q. Now, have you ever examined spaces on shipboard to determine whether they were fit to carry coal?

A. I have not.

Q. Does the fact that they had a fire in this space, No. 3 'tweendecks, described to you by Mr. Jones, have any influence on your opinion that it was an improper place to carry it?

A. Naturally so, I would say so.

[fol. 234] Q. Isn't that the real reason why you criticize it?

A. It has its reasons, certainly.

Q. I mean to say, that you know, and we all know, there was a fire in that 'tweendecks.

A. Yes, sir.

Q. What you are saying to us in substance is, isn't it, that that proves that that was a bad place to carry coal?

A. Certainly that is a conclusion that I would arrive at.

Q. You have not started at the other end of this investigation and figured out in your own mind what would be an ideal place on board a ship to carry coal, have you?

A. Yes, sir.

Q. What would be the ideal place?

A. I have been engaged for 20 years in storage of coal, and the storage of coal is just the same on land as it is on sea; and I think I know the conditions that must be followed for safe storage of coal. First and foremost, either absolute exclusion—excuse the word "absolute", I will leave that out—either exclusion of the oxygen, or free circulation enough to carry off the heat. Now that does

not make any difference whether it is on shipboard or on land. That is a condition sometimes very difficult to get, those conditions enter into it. Within the last three years there have been stored about 15,000,000 tons of coal, without loss. That does not look as though is was difficult.

Q. Was that the coal that was submerged?

A. It was not, none of it.

Q. There have been extensive experiments carried on in the last few years, have there, on this subject of storage of coal safely?

A. A few years? If you mean by that 20 years, I would say yes.

Q. And knowledge has gradually been accumulating, the way knowledge does?

A. Certainly.

[fol. 235] Q. Now suppose, Prof. Parr, that an investigation had been made of the so-called old coal, that is, the coal that was in this ship since June 30th, suppose they drove a pipe down, for instance, in the body of the coal and took the temperature with a thermometer, suppose then, that whatever they did, there was an adequate and full investigation made, and that that coal was not warm, that it was below the temperature that you have mentioned, considerably below, would you say that it was unsafe to load a new lot, not freshly mined coal, but a new lot of the same grade of coal, on top of the old coal?

A. In proportion as that temperature was low—lower than the danger point, in that proportion it would be safe, but not necessarily—it would be safe, but not necessarily safe.

Q. Well, now, suppose this ship, the "Gallileo", arrived in New York with that 160 tons of coal in No. 3 'tween-decks, which was then a little less than two months old, because she arrived here, I think, on the 22nd or the 23rd of August, perhaps, somewhere in that week anyhow, she was loaded up on the 30th, do you think that the coal ought to have been thrown away?

A. I do not.

Q. What should the shipowner do?

A. He should not pile in a new lot on the old pile.

Q. Where should he put it?

A. I think the general concensus of the advisors for handling fuel on shipboard would say it should be put nearer the outlet, so that it would be used out first.

Q. The idea would be to use that coal up more—before any of the later coal was used; is that the idea?

A. It would be a procedure of safety to put it where it [fol. 236] could be gotten out earlier rather than late.

Q. In other words, the oldest coal on board a ship ought to be used up first; is that correct?

A. It is.

Q. Are you familiar with the practice of bunkering ships?

A. I am.

Q. Do you know whether or not it is a common practice in the steamship business, to load new lots of coal on old lots of coal?

Mr. Jones: If your Honor please, I object to that question, on the ground that here we have evidence of a dangerous condition, and nothing as to practice is admissible under the circumstances.

The Court: It is certainly proper on cross examination. We haven't got it established as a fact, that it is dangerous, or, rather, found it is a fact; and this witness says it is dangerous, and I think it is proper cross examination.

Mr. Jones: I would like to call your Honor's attention to the case of Cudahy Packing Co. against Nargisenfeld in 3 Fed. Second 567, which is the opinion of our own Circuit Court of Appeals, in which the Court said:

"It is well settled law that usage will not be allowed to subvert an established rule of law. To allow this to be done, as was said in Barnard vs. Kellogg, would lead to mischievous consequences, embarrass trade, and be against public policy. An established rule of law cannot be changed by any local custom of the place where the contract is made."

[fol. 237] The Court: What has that got to do with what we are considering?

Mr. Jones: And then I call your Honor's attention to what is also said in that case:

"It is said that the trial court erred in excluding evidence offered in behalf of defendant showing a custom in the

wholesale egg trade in New York City for the buyer before purchasing, to inspect only ten cases out of a carload, to consider the seller as representing that the balance of the eggs are equal in quality to those inspected, and if, when examined within a reasonable time after delivery, all the eggs do not conform in quality to the ten cases inspected, for the buyer to make an allowance for defective eggs, or take back the shipment."

The Court: I do not see the relevancy of that, Mr. Jones; I wish you would if you can point it out to me.

Mr. Jones: Also the case of Tilley against County of Cook, 103 U. S., in which the Court said:

"It is complained that the evidence offered to prove the custom of architects, was excluded. We think it was rightly excluded. Proof of usage can only be received to show the intention or understanding of the parties in the absence of a special agreement or to explain the terms of a written contract. In all cases where evidence of usage is received, the rule must be taken with this qualification, that the evidence be not repugnant to or inconsistent with, the contract."

The balance of my objections are, I object to any evidence [fol. 238] of usage or custom on the following grounds:

1. On the ground that the usage or custom has not been pleaded; and

2. On the ground that usage will not be allowed to subvert an established rule of law that cargoes shall not be stowed in an unsafe and dangerous compartment; and

3. On the ground that evidence of custom or usage will not be permitted to vary the terms of the written contract of carriage requiring due diligence to make the vessel safe and fit for the carriage of cargo; and

4. Upon the ground that the respondent is precluded from setting up any defense of usage, because by stowing the goods in an unsafe compartment, the vessel broke her contract, exposed them to greater risk than had been agreed, and thereby directly caused the loss and accord-

ingly became liable for a deviation and cannot escape by reason of the relieving clauses inserted in the bill of lading for her benefit and must account for the value at destination.

See the St. Johns Company General, 263 U. S. 119.

I have stated my objections.

The Court: I overrule the objections, and admit it, with an exception to the libelant, and I take it on two grounds:

In the first place, it is proper cross examination;

That in the second place, as being relevant upon the ques-
[fol. 239] tion of what is due diligence.

The respondent is held only to the degree of care which an ordinary person would have exercised under the circumstances, and I hold that it is open to him to prove, if he can, at the time that there was a general custom in regard to this situation.

Mr. Jones: The care an ordinary person should have exercised, if your Honor please.

The Court: Would have exercised under the circumstances, as carrier of goods; an ordinary person would have taken a certain degree of care; as high a degree of care as an ordinary person would have taken. If he can prove that generally, in the trade, it is done in a certain way, that is evidence on the question of whether what was done here was up to the standard of an ordinary person in this line of business.

I will overrule the objection, with an exception to you.

Q. Will you repeat the question to the witness.

(Question repeated by the reporter as follows:

"Do you know whether or not it is a common practice in the steamship business, to load new lots of coal on old lots of coal?")

A. I do not know what the practice is or what the custom is.

Q. Professor, what have you to say about the time element involved in the situation? Is the time element a factor
[fol. 240] —the time element involved in ignition—is there any relation between the time that that coal starts to heat, and the ignition point, with respect to the supply of oxygen and the original temperature of the mass?

A. That would be one of the factors, but not the only one, governing, the matter of time.

Q. Will you please tell us what the factors are in relation to the time element? In other words, you have stated, Professor, that certain things were dangerous according to your view. I would like to have that tied up in some way to time. In other words, do you expect a fire in five minutes, or ten minutes, or two days? I am not trying to suggest any time to you, but I would like to get your views on the relation of time to the amount of oxygen supplied.

A. I was supervising storage of several thousand tons of coal in which case some of the car lots could not be cared for, and we shunted it onto a side switch, and unloaded by hand. The same coal was put in another mass. The one coal was ablaze in four days, and the other coal from the same mine, same shipment, was in storage for seven months. Now, it is a little difficult to apply a rule which covers the time. The chief factor in the case, I presume, was the accessibility of oxygen in the one pile and the non-accessibility in the other. Now, as to how much oxygen would be required to set fire to one mass quickly, and not at all to another, would be simply a matter of how much would be required to do that amount of heat—to make that amount of heat.

Q. If there is a small amount of oxygen, is the process slower than if there is a large amount?

A. It is.

[fol. 241] Q. And another factor in the situation would be the original, what you call the mass heat, or the heat of the mass, rather?

A. That would govern in a large measure the speed of the reaction.

Q. Now, Prof. Parr, if that coal in those coal bunkers, the old coal, was so hot that it was burning the men's shoes who were trimming it in certain places, I don't mean the whole mass was hot, but that certain spots in this pile of old coal was so hot that it was burning the men's shoes, would there be any question at all in your mind that the coal ought to be taken out of there?

A. It ought to be done at once, or at least something done with it to cool it down below the ignition point.

Q. If it is that hot, it is probably on fire in some place, isn't it?

A. Depending upon what you mean by being on fire; if it is that hot.

Q. What we call a hot spot?

A. A hot spot, it certainly is a dangerous factor, and ought not to be passed by without some attention given to it.

Q. And you would suggest what?

A. I would suggest taking it out and putting it where it could be immediately used under the boilers; that is our practice, wherever a hot spot occurs, it is taken out and put where it can be immediately put to the boilers in the process of the boiler supply; and by the term "immediately", I mean put in process of being fed to the fire. If, in that process, the temperature of the mass, by turning it over, is cooled down below the ignition point, it will stop burning.

Q. Now, Professor, how soon might there be spontaneous combustion? What is the shortest time that you have experienced?

[fol. 242] A. I have a lot of experiments which show that from a certain temperature of a coal mass, let us say 300 degrees, which might be a scorching temperature for the shoes, it is about 30 minutes until it is afire and glowing, if it has a supply of oxygen.

Q. Now suppose, Professor, that you assume an ordinary mass of coal that had been mined a month, leave out this question of freshly mined coal, I want you to eliminate that from your mind; if you take some Morrisdale coal which was properly seasoned, or whatever the technical name is, and put it in this compartment that Mr. Jones and you and I have been talking about, how soon would you expect a fire to occur? I am only thinking now about the original coal that you were putting in there.

A. The factors that enter into it are so numerous that unless they are designated it would be impossible to say. It would take a long enough time for the fire to break out, is the only answer that can be given to your question.

Q. Dr. Porter offered us an answer from one day to 30 days. Do you agree with that statement of his, or do you disagree?

A. I heard his statement.

Q. Do you agree with it?

A. I would say that my answer to it would be entirely different; I would say it would depend upon the conditions. If the conditions were right, one day would be enough. If they were not right, and were such conditions they might re-

quire 30 days, and then it would take 30 days. So I agree with Dr. Porter.

Q. I am trying, Professor—perhaps I have not made myself clear; but I am trying to get you into this compartment [fol. 243] that Mr. Jones has described to you in his hypothetical question, and his supplemental questions, and ask you to keep that compartment in mind.

The Court: On the "Gallileo".
Mr. Keating: On the "Gallileo".

Q. And I ask you to assume that, say 350 tons of coal were put in there on June 30th, 1926, under all the conditions that Mr. Jones has assumed; and I ask you to tell me how long in your opinion after, would that coal have been on fire.

Mr. Jones: Assuming that there was of the old coal, 160 tons, and thereafter this was put on top of it?
Mr. Keating: No, no, no; I am asking only that the original space in the "Gallileo" is as described by Mr. Jones, which was described here very fully, and all the assumptions that he made, and there is only one lot of coal put in, in No. 3 'tweendecks on the "Gallileo" on August 30th.

Q. I would ask you to tell me how long before, in your opinion, there would have been a fire, if there would have been a fire, in your opinion, under those conditions. Is it your opinion that there would have been a fire shortly?

A. I think that the conditions are such as to make it quite probable that there would have been a fire, almost a certainty that there would be a fire.

Q. And how long, in your estimation, would that process take? Leave out—I have not the date when some fire occurred; but just disassociate from your mind the fact that you knew there was a fire, and you were only looking at [fol. 244] this space that this coal occupied, and you knew all the facts that Mr. Jones had told you about it, and you were asked to described to us and tell us as closely as you can when there would have been a fire.

A. I don't think that it is possible to say how long it would take before a fire would break out, because the conditions are not known. I can give you my experience from similar conditions where a fire——

Q. But, my dear Professor, Mr. Jones has told you all the conditions.

Mr. Jones: Let him answer the question, please.

The Court: No, he was not answering it, though.

A. Well, may I not answer that question by inference from similar conditions.

The Court: Give us your opinion, is the question.

A. (Continuing:) My opinion would be that it might break out in 24 hours; it might take a longer time than that; there is no reason inherent in the case itself why it might not be hot enough to reach a danger point at least in 24 hours.

Q. That is, after June 30th?

A. I thought you were talking about August; you said something about August.

Q. No, I am afraid I have not made myself clear, and I am sorry, Professor: I am asking you to assume that on the steamer "Gallileo", all the phyical conditions regarding bulkheads, and so forth, that Mr. Jones has asked you to take into consideration in his hypothetical question, [fol. 245] existed on June 30th, 1926, and that on that day 350 tons of Morrisdale coal was put into the space on June 30th, and remained there, going back and forth across the ocean; and I want to know when, under those conditions, you would have expected a fire in that mass, that is, only the mass that was loaded on June 30th, 1926.

A. I would say it would not be a safe condition, and I would——

Q. I have not asked you that, Professor; I asked you how long it would take before it took fire.

A. I do not think it would be possible to say how long, because you do not specify—you will not allow me to specify the conditions excepting as they are——

By the Court:

Q. What are the conditions that you have in mind?

A. The condition of accessibility of oxygen is one.

Q. But don't you see, that is specified in the question, the actual physical conditions are specified: With bulkheads such as have been described here, and with a hold such as

was described, and ventilators and so forth, under those conditions, what is your answer, for there is a certain accessibility of air; now, with that accessibility of air, how long will it take?

A. It might not reach the combustion point at all.

By Mr. Keating:

Q. The fact that no fire took place—of course, this has not been proved, but I ask you to assume, Professor, that there was no fire took place until August the 28th, that is, [fol. 246] for a period of approximately two months, does that indicate in your mind at all, anything with respect to the supply of oxygen that was in that physical place, under the physical conditions described by Mr. Jones?

A. Not alone, not necessarily no.

Q. Does not indicate anything about oxygen supply, the fact that no fire took place for approximately two months?

A. It would indicate that the conditions of the oxygen supply, among other conditions, was not sufficient to be a contributing cause.

Q. Now if on June 30th this coal was in a dangerous state, say, of 90 degrees, and there had been considerable oxygen supplied to that coal on June 30th, and a few days following, you would have expected a fire very quickly, wouldn't you?

A. I would have expected a fire.

Q. Quickly?

A. Yes, quickly.

Q. Does the fact that no fire did occur until August the 28th, is some indication, isn't it, that the original temperature in that coal and the amount of oxygen—that the original temperature of that coal was low, and the amount of oxygen supplied during the following two months was very small?

A. It would not cause the combination to be in the direction that you state, yes.

Q. That is what that indicates, doesn't it?

A. Yes.

Q. Is there any question about that?

A. No.

Q. In other words, if you are going to have a quick fire in a mass of coal, you either have got to have—you have got

to have two things: You've got to have a fairly high temperature in the coal, and a fairly large amount of oxygen?

A. Accessibility of oxygen, I should say.

[fol. 247] Q. Yes, accessibility.

A. That involves fineness of division, which is a factor of accessibility, and segregation of the mass, which is a factor of accessibility—under those conditions I would say yes.

Q. These conditions that you talk about, the fineness of the coal and all that sort of thing, and the piling of the coal, that affects your opinion with respect to the availability of oxygen?

A. It does.

Q. And those are the only importance of those considerations in the fact that they determine, so to speak, the amount of oxygen available?

A. The accessibility of oxygen.

Q. So that if you get to the point where you have not any fire for a considerable period, you are entitled to assume, are you not, that there was nothing radically wrong with the temperature of the coal, and that the availability of oxygen supply was not too great?

A. Yes; I would add also that an opportunity for discharging the heat or dissipating the heat was sufficient to keep the temperature down.

Q. That is, for that period of time, that would indicate that there was nothing seriously wrong with the storage space?

A. Yes.

Q. Now, when you get down to the fact that the fire occurs within a very short time after coal is loaded, then you know that there has been something serious happened which has caused a large supply of oxygen or the raising of the heat of the mass; is that correct?

A. A confining the heat of the mass and preventing its dissipation, yes.

Q. Now if, on August the 26th, the temperature of the mass was quite high, excessively high, and new coal was [fol. 248] dumped onto that pile of coal, the temperature of which was quite high, would you expect a fire very shortly—would you not?

A. I think so; yes.

Q. Might it happen in 8 or 10 hours?
A. I don't know.
Q. Would you not say it would?
A. Certainly not.
Q. Would it happen in 24 hours? Would you expect it within a fairly brief period—and by brief period, I mean 24 or 48 hours.
A. I would expect it within a brief period.

Redirect examination.

By Mr. Jones:

Q. Mr. Keating has asked you a number of questions about the heat in this first lot of 160 tons of coal which was put in the ship on June 30th. Assuming that there was only a small patch of that coal that was hot, would that be sufficient to generate a fire?
A. It would.
Q. In other words, you do not require that the whole mass be heated?
A. Absolutely not.
Q. I do not know if it is necessary to ask you this question, but in order that there may be no misunderstanding, I will put it to you: In the light of all of the facts that have been put to you by Mr. Keating, is it still your opinion that this compartment was an unsafe compartment in which to stow coal?

Mr. Keating: I object to the question as grossly leading.
The Court: I will allow it. Exception.

A. I would say yes.

[fol. 249] Thomas Lawrence Stanley, a witness called on behalf of the libelant, being first duly sworn, testified as follows:

Direct examination.

By Mr. Jones:

Q. Mr. Stanley, what is your business? A. Consulting engineer, marine surveyor.

Q. How long have you been a consulting engineer and marine surveyor?

A. I have been consulting engineer for myself for close to three years now.

Q. Will you give the Court a brief account of your experience and training.

A. After leaving school I spent about 6 years apprenticeship in the building of marine engines and boilers and installation of them in ships; after which I went to sea for close to 6 years; following which I was in Robbins Dry Dock for about a year; after which I was then surveyor for the Naval Construction Department in Quebec for a year; after that I was for about 4½ years superintending engineer for the Submarine Board Corporation in the Port of Newark on the building of ships; after which I was for between 4 and 5 years superintending engineer for the Transmarine Line in charge of their ships, and of the engineering operations of the vessels; that would bring me down to the time I started in business for myself.

Q. Have you made a study of coal fuel and the possibilities of spontaneous combustion in coal fuels?

A. Well, I have kept myself up with the times, to cover any job when I was at sea, naturally.

Q. Did you make a trip to sea, did you go to sea, on [fol. 250] coal-burning ships?

A. All the ships I was at sea on were coal burners.

Q. Did you have practical experience with fire in bunkers?

A. Yes, I have had fire on two occasions in the bunkers; one very small fire in one of the holds of the ship, at one time.

Q. Did you hear the hypothetical question I put to Dr. Porter?

A. Yes.

Q. Are you in a position to express an opinion as to the contributing causes to the fire which I described in that question?

A. Yes.

Q. Will you give us your opinion as to the contributing causes of the fire which I have described in that question?

A. It is my opinion that the cause for that was the non air-tight bulkhead—the wooden bulkhead here described, which allowed the air to filter through the body of the coal,

thereby allowing it to generate heat from an absorption of oxygen; and in addition to that, the other coal was put on top of the old coal instead of first removing the old coal to a place by itself where it would be used as quickly as possible, in addition to these, it is my opinion that any coal which has been in a bunker or an enclosed space for any—for a long period of time, and thereby allowed to absorb oxygen, that the reason it might not have gone on fire is due to the fact that there may have been ideal conditions for through ventilation offsetting the heating of that coal, and the putting on of another layer of coal on top of that, which of course is a very poor conductor, might have the effect of shutting off that through ventilation and thereby allowing the coal underneath to heat up and catch fire.

Q. Mr. Stanley, can you say whether or not this matter of the avoiding through ventilation, is a subject that is well [fol. 251] known to people in the shipping business?

A. Yes, it is; it is in every engineering book, for instance, that I ever read, the question is taken up of the danger of coal absorbing oxygen and generating heat, causing fire.

Q. Do you know of any other publications containing references to it?

A. Well, it is always in Lloyd's Register, and then there are always various pamphlets, from time to time, some engineering societies, and papers being read, and pamphlets—my own experience has been from Lloyd's——

Q. You refer to Lloyd's Register?

A. Lloyd's Register of Shipping.

Q. Do you know anything about a book called Lloyd's Calendar?

A. Yes, there is something in that on spontaneous combustion in every issue; and it is issued every year.

Q. Can you say whether or not a compartment such as I have described in the hypothetical question, is a safe place in which to carry bunker coal?

A. In my opinion it is not.

Q. Why would you say it is not a safe place?

A. Because in order to provide a safe place for the carrying of coal, there are two essential points that have to be accepted. One is to exclude all the air, if possible; and the other is to create a condition where you would have a constant circulation of air through the body of the

coal, which would be sufficient to offset by cooling, any heating that might be generated by the absorption of oxygen from the air.

Q. Do you know anything about what they call "surface ventilation"?

A. By the surface ventilation, is meant just the ventilation provided by ventilators, or an opening of the hatch, [fol. 252] or whatever the way providing for getting onto the top of the mass of coal, which is for the purpose of eliminating the dangerous marsh gas that may come out of the coal and which is of course lighter than air and comes up on the under side of the deck, and which, if mixed in the proper proportion of air, will cause an explosion if there is a naked light produced in there.

Q. Assuming that the ventilators in the compartment which I have described to you, consisted of two ventilators in the aft part of the compartment, the two ventilators being located about 23 or 24 feet abaft of the wooden bulkhead which I have described, would you say that would be proper ventilation for that compartment?

A. It would be proper ventilation for taking care of the marsh gas, but it would not be proper ventilation in my opinion for cooling the coal down, for preventing a spontaneous combustion.

Q. What would be, in your opinion, a proper ventilation?

A. Well, my own method of handling that thing has been to exclude all the ventilators as far as possible, that is, any ventilators into the bunkers except just in so far as opening the hatch was concerned while the men went down there, to give them an opportunity to go in and do some work.

Q. What have you to say in respect as to whether or not the bulkhead would be air-tight?

A. Absolutely should be air-tight, without any question whatever.

Q. You can say whether or not a non-watertight bulkhead is air-tight?

A. No, it could not be air-tight.

Q. It would not be air-tight?

A. No.

[fol. 253] Cross-examination.

By Mr. Keating:

Q. Mr. Stanley, you hold a chief engineer's license?

A. I have a British chief's and an American chief's for steam, one for Diesel and for electric drive.

Q. When did you get your license?

A. Which, the English ticket?

Q. Yes.

A. Just about the outbreak of war, just before that, around that time, 1914.

Q. Did you go to sea as a chief engineer?

A. Yes.

Q. For how many years?

A. For, roughly, a year as chief.

Q. Before that time you were what?

A. Third and second.

Q. Third and second?

A. Yes.

Q. Has the chief engineer any duties in respect to coal?

A. He has the job of superintending the consumption of it.

Q. Anything else?

A. It is his duty to report to the office how much coal he has left aboard, and show what he did with the other and how he consumed it, and so forth.

Q. Any other duty?

A. Well, it is his duty once the vessel leaves the dock, to take full charge of his entire department.

Q. I am talking in regard to his duties in respect to coal.

A. Just what do you mean, "in respect to coal"?

Q. Have you enumerated all the duties that the chief engineer of a vessel has in respect to the receipt and stowage and care of coal on board a ship?

A. And the use of it.

Q. And the use of it?

A. Yes.

Q. Does he have any duty about its receipt?

A. The chief engineer's job as a rule is to see it stowed. [fol. 254] In other words, watch that the trimmers do not leave pockets in the middle of the coal.

Q. Has he any duty of inspection of the coal?

A. Well, my knowledge in British ships is that he has not a thing to do with it; in fact, nothing to do anyway, either with the quality or the price or anything else, and in very few cases anything to do with it at all.

Q. Did you have anything to do when you were chief engineer, with the inspection of your coal?

A. No; none whatever.

Q. You took just what came aboard?

A. I took what was ordered.

Q. You didn't look at it and see the coal?

A. Well, I looked; but as to complaints—do you mean other chiefs that I was with, or only when I was the chief in charge?

Q. I mean in respect to your own work.

Mr. Jones: Let him answer the question, please.

A. In my own case I never knew of any complaint I made had a particle of effect.

Q. Your owners were a bad lot; is that right?

A. I take it that the superintendent engineer figured that he knew best what should be aboard.

Q. You think he knew more than you?

A. In his opinion apparently he did.

Q. I am asking for your opinion?

A. In my opinion I don't think he did.

Q. Well, that is a legitimate issue! Now, did you have in your whole like as a chief engineer, did you ever load any coal that was sent aboard your boat, on top of any coal that was already there in your bunkers?

A. No.

[fol. 255] Q. You never did?

A. No, sir—yes, I am wrong there: I have loaded coal and thrown it on top of the coal that was in the side pockets, because, naturally, we were never absolutely out of coal, and it was put down into the side pockets on top of that.

Q. But in all your other experience, you never loaded any coal into your bunkers without first cleaning them out; is that correct?

A. Oh, no, no, I didn't mean that at all; without moving the other coal out of the way and not putting new coal on top of old except in cases where it was put down, the first lot of coal coming down into the side pockets.

By the Court:

Q. What are the side pockets?

A. The side pockets are the first tap of the coal to the stoke hole. You have your side pockets that have a sliding hole leading onto the floor plates of the stoke floor, and that is the first one that is used. In other words, this will flow into them from the first that is put into the pockets, and comes down into that hole.

By Mr. Keating:

Q. What is the size of the side pockets?

A. That all depends upon the size of the ship.

Q. Well, your ships.

A. I could not tell you that offhand now.

Q. I will suggest to you, they would hold about 10 or 13 tons?

A. I would say that was entirely ridiculous.

Q. All right; I am asking you?

A. Absurdly small, your Honor.

[fol. 256] The Court: Too small?

The Witness: Oh, yes.

Q. Well, let us create the absurdity into a fact; tell me how much they would hold?

A. I would say that the side bunkers would hold——

Q. Side pockets.

A. Side pockets.

Q. Not side bunkers.

A. I don't know that anybody knows that there is any difference in it, when it comes to that.

Q. Well, please do not fence with me; tell me how much the side pockets hold.

A. I don't like these interruptions.

The Court: Just think of the question, please, and answer it. Read it to him.

Q. (Repeated by the reporter.)

A. Roughly speaking, 50 tons a side, I would say.

Q. Now, what was the name of the ship on which you served as chief engineer?

A. "J. Y. Short."

Q. Do you say that it is a general practice in—are you familiar with the general practice of loading bunkers in New York?

A. Yes.

Mr. Jones: May I have the same formal objection that I made before on the question of such proof of custom, if your Honor please, with the same force and effect as if I repeated the whole objection?

The Court: Yes, and I will overrule the objection and give you an exception.

Q. What is the practice with respect to fueling, that is, filling in with new coal over the old coal left from a previous voyage?

A. Trim it into a position to use it as quickly as possible.

[fol. 257] Q. You approve of that practice?

A. I certainly do.

Q. You would not favor throwing away the coal?

A. Oh, no.

Q. Now, the amount of coal that is left sometimes may be considerable, may it not?

A. Usually it is not.

Q. Well, sometimes it may be considerable, may it not?

A. Only in very extraordinary circumstances; the general run of cases would be that a ship would get into port with no more than probably three days' coal aboard.

Q. Suppose she is coaled for the round?

A. Well, that is not a thing that is very often done.

Q. Is it not done, and very often done, where there is a coal strike at one end or the other?

A. If you have no alternative, if you cannot put in intermediates, naturally that is all that you can do.

Q. If your old supply of coal can be used up quickly, that is, if it is put in a position irrespective of where that position, if it can be used up quickly, you say you would approve of that, or not?

A. Yes, certainly I would.

Q. Get rid of the coal in two weeks, would that satisfy you?

A. Under certain circumstances, yes; under such circumstances as were described in this vessel I would say no.

Q. I understood you to say that you had fires on two occasions while you were chief engineer?

A. Not while I was the chief, I didn't say.

Q. While you were at sea; I beg your pardon.

A. Yes, sir.

Q. Was that fire—were those fires both in the bunkers?

A. There was three instances; two in the bunkers and one in the hold. The one in the hold was very small, almost negligible fire.

[fol. 258] Q. Was there any new and old coal mixed in your bunkers?

A. That I do not remember. That circumstance, that instance, was in 1911, and the other is in 1914, so I do not just remember what the coal was.

Q. You don't remember whether—what the circumstances were with respect to the age of either of the coals was on the two occasions when you had fire, when you were at sea, I mean the bunkers as distinguished from the hold.

A. No, except that in the case of the one in 1911, I know the ship was in a—had loaded bunkers on the Tyne, and then had gotten some more in Cardiff, and that ship was in the habit of loading enough coal then in Las Palmas to bring her around, the round trip back to Las Palmas.

Q. And all of that indicates what?

A. Well, I mean that is all I can remember about it; I do not remember—I could not say how the coal was under those circumstances.

Q. Have you been aboard a good many ships sailing out of this port?

A. Yes, sir.

Q. During the time that you were aboard the ships, have you ever seen a temporary wooden—a wooden bulkhead used in connection with a coal bunker?

Mr. Jones: If your Honor please, I object upon the same ground that I enumerated before when the matter of usage was taken up; and I further call your Honor's attention to the case of the American Coal Co. against DeWese, 30 Fed. 349, the opinion of the Circuit Court of Appeals of the Fourth Circuit, in which he said:

"On these questions, we think the Court was right in [fol. 259] excluding the testimony offered. In the light of the admitted physical facts that existed in connection with

the waste pile, it seems clear that usage and custom with regard to other waste piles built under different or even similar conditions, no matter how well established, could not excuse the defendant from negligence in the way in which the waste pile was built up."

And then further he says:

"A negligent act, clearly shown to be such, cannot be justified on the ground of custom or usage, and evidence of such custom or usage is not usually admissible for that purpose. The broad rule has often been asserted that usage and custom do not justify nigligence, and obviously the fact that the defendant has been habitually careless and asserts a usage to be exempt from the legal consequences of his negligence, is of no avail. Where the usage or custom is invalid by reason of its unreasonableness, unlawfulness, or the like, and is productive of injury, the generality of the custom cannot in any given case in any degree excuse or justify the fact."

And I object, if he intends to offer this evidence on any such theory.

The Court: The rule that I have made and make on this occasion, is not at all at variance to that rule as I understand it. This is merely for the purpose of establishing what persons of ordinary diligence would do. If it were found that what was done here by the respondent was negli-
[fol. 260] gent, I would certainly not think that the mere fact that it was custom to do negligent acts, would relieve them of responsibility.

Mr. Jones: That is all I am making clear about this, that is the real point that I wanted to bring out.

The Court: It seems to me perfectly proper in determining one of the elements of whether there is negligence or not, that I have to determine what ordinary persons would have done, and if he can establish a general custom throughout the trade, seems to me that that is evidence bearing on the question, not conclusive, but bearing upon the question of what ordinary persons would have done with the degree of responsibility that this respondent had. I note an exception in your favor, Mr. Jones.

Mr. Keating: May I have the last question and answer of the witness and the following question then read:

(The reporter then read as follows:

"Q. Have you been aboard a good many ships sailing out of this port?

A. Yes, sir.

Q. During the time that you were aboard the ships, have you ever seen a temporary wooden—a wooden bulkhead used in connection with a coal bunker?")

A. Yes, sir.

Q. Is it a usual thing, or not?

A. It is quite common where there are extraordinary conditions arising, necessitating carrying more bunkers than the ship is ordinarily fitted to carry.

[fol. 261] Q. There are a good many ships doing it, aren't they?

A. There are a good many ships doing that, where they can't get the coal for the trip, where they want to store it.

Q. I understand that you have two suggestions, in order to solve this problem, and if I am wrong, correct me: One, is to exclude air altogether; and two, otherwise to give a constant supply of air through the coal.

A. You are wrong there on my statement.

Q. I want to be corrected; what did you say?

A. My statement was that you were to exclude any air coming in except from whatever surface ventilation you may give it by opening up the hatch while the man is in there. In other words, that you provide air simply for the purpose of getting rid of the dangerous marsh gas that may accumulate, and in not allowing air to go in there which might be obtainable for the coal for spontaneous combustion through a supply of oxygen.

Q. In other words, that is your view, that the coal should have no air, and it is necessary, so far as possible, it is necessary to take off whatever gases accumulate to prevent explosions?

A. Yes, sir.

Q. So that you are satisfied with any surface ventilation which takes off the coal gases?

A. Yes, sir.

Q. And you do not want any more of that than is necessary?

A. I do not want any more of that than is necessary.

Q. If you do not have an explosion you are satisfied? That is, if it does not create an explosive condition you are satisfied with the ventilation, and that is the only thing that you look to, as regards surface ventilation.

[fol. 262] A. Surface ventilation—sufficient surface ventilation to get rid of the gas so there will be no explosion, and thereby cutting down the amount of air in your bunkers to a minimum, just enough for the man to be able to work in there and get rid of any gas that may be accumulated.

Q. And you did not say that there was any bunker constructed that excluded all air altogether, I have not in here that you did not say that.

A. No.

Q. There was no such bunker and there is no such bunker constructed, or compartment, aboard a ship?

A. I have never heard of any.

Q. There is always some air in every part of the ship, is there not?

A. That is everywhere but your double bottoms.

Q. I am talking about the places where people ordinarily go into.

A. They all have air more or less.

Q. How would you supply—if that is not possible, to exclude all the air, or sufficient air to comply with your condition No. 1, what is your suggestion for furnishing adequate air supply? How will that be done on vessel bunkers?

A. Provide your bunkers—naturally your sides will be tight, provide steel bulkheads at the ends, and then simply open up your hatch on top, and a ventilator will answer the same purpose.

Q. Do you mean to say that that will supply—that that arrangement will supply a complete current of air sufficient to carry off all heat and so forth that has been described here?

A. Yes; I know that it absolutely will, by my own personal experience.

Q. Well, now, what was your experience; let us get at that. You mean you did not have a fire?

[fol. 263] A. No, I mean my own personal experience going to sea for between 5 and 6 years. The idea that you have got to have a circulation of air going through there like a draft of air through a bunker all the time, is absolutely wrong. You are not supposed to have any such thing, because you cannot lay your coal in a condition there to have your air able to go through to provide the necessary cooling effect, because as long as you have an outlet the gas itself will get out, because, due to the fact that it is very much lighter than air, it will always be up on the under side of the deck, and will take the avenue of least resistance, getting out, and any heat that is generated in that bunker will naturally make that gas expand and it will make it all the quicker go out.

Q. Leave out the cause for the minute, because, of course, I may be wrong; but I thought that you might disagree with Prof. Parr and Dr. Porter: Is it my understanding that dealing with the coal as such, never mind the gases, dealing only with the supply of oxygen and the heating, possibly I have not got the proper descriptive word, ventilation I would call it.

A. No, I am in favor of no ventilation on the coal at all.

Q. I have not got to the explosion point that we spoke about, but have reached simply the subject of ventilation of some sort; are you satisfied that it would work out satisfactorily, from your experiences?

A. That is, a surface ventilation, my statement was.

Q. You haven't any idea, I take it, have you, of running a current of air through the coal?

A. No, sir, because I do not think it can possibly be done, not satisfactorily, certainly no shipowner is going to place his coal into layers so as to provide cooling ventilation [fol. 264] through it, it just is not done.

Q. Am I wrong when I understood you to testify to a question by Mr. Jones, that you were in favor of excluding the air in so far as possible, that was No. 1, and No. 2, furnishing a full and constant supply through the coal?

A. If it could be; but in my opinion it cannot be done, and is not practicable.

Q. So that your suggestions really come down to one?

A. To one.

Q. And you are in favor of excluding all air so far as possible?

A. From going through the mass of the coal.

Q. From going through the mass of the coal, and supplying some kind of ventilation which will take off the coal gases?

A. Right.

Q. Is that correct?

A. Yes.

Mr. Keating: I have no further questions of this witness.

WILLIAM G. MCLENNAN, a witness called on behalf of the libelant, being first duly sworn, testified as follows:

Direct examination.

By Mr. Jones:

The Court: Would you rather stop now?

Mr. Jones: I will finish with this witness, if your Honor please, and then stop; I don't think it will be very long.

Q. Capt. McLennan, will you give us a short account of your experience as shipmaster and marine surveyor?

[fol. 265] A. I went to sea in 1877 and became master in 1887, and was master through until 1917. In 1917 I brought a ship out to this side, and I left her, and I joined the Firemen's Fund Insurance Co. as surveyor. I was with the Firemen's Fund for about 7 years, and they gave up hull insurance, and I went out on my own, I think it was, November, 1923—I won't say whether 1923 or 1924.

Q. Since that time you have been in practice as a marine surveyor?

A. On my own. I was such since 1917, a marine surveyor.

Q. You hold a master's license?

A. I do.

Q. British master's certificate?

A. A British master's certificate.

Q. How long have you held that certificate?

A. I think I got it in 1885.

Q. During the course of your experience, have you had anything to do with coal and cargoes of coal?

A. I have carried coal in sailing, and I have carried coal in steam.

Q. What kind of coal have you carried?

A. Well, I have carried Welsh coal, I have carried North Country coal, I have carried Lancashire coal, and I have carried Australian coal.

Q. Ever carry any American coal?

A. Oh, yes.

Q. You heard any questions I put, did you, Capt. McLennan, to Dr. Porter?

A. I did.

Q. Are you in a position to state whether or not you could form an opinion as to the contributing causes of the fire which I mentioned in that question?

A. Yes.

Q. What in your opinion were the contributing causes of that fire?

A. Well, I would consider one of the main contributing factors, putting new coal on old coal, that probably there was some heat in the old coal, that was not dispensable after [fol. 266] taking the new coal on top of it, which would increase it.

Q. What was the other contributing causes?

A. According to—I am going now more by my chemical experts——

Q. No, no; you cannot tell what somebody else has said, I am talking what you know.

A. We always understand—my information is all from this Board of Trade pamphlet, Lloyd's pamphlet, which we get at every port we are in, a British shipmaster gets them from the British shipping offices in England, or the British consul, they publish what they call "Notice to Mariners", which was always given to shipmasters free. It has many titles and lots of them are entitled, "Dangers of Coal", and anything like that that is gotten out by the Board of Trade, and the Board of Trade I know—I know that the Lloyd's publish it, I know I have seen it in their calendar for 1913, about the study of coal and the circulation of air through it, and the surface circulation, so that is what I am working on on that, I must take superior knowledge to mine.

Q. You don't know anything about it of your own knowledge?

A. No, sir, no more than I know I have tried to follow out these rules.

Q. Have you ever had any experience with coal fires?

A. Yes, I have had one or two very serious ones.

Q. What were the nature of those fires?

A. I loaded once a cargo of coal in Norfolk, for Cavite. I had instructions to go into Durban and take more bunkers, so we had gone out around the Cape of Good Hope. My owners' instructions were to take on bunkers at Durban or Port Natal, which was the same thing. I went there and [fol. 267] filled my bunkers, and three days afterwards I was beautifully on fire.

Q. That is, you put fresh coal on top of old coal?

A. I did as I was told in that case; I just filled my bunkers.

Q. Who told you to?

A. My instructions from my owners, gave me instructions, and I cannot say now whether it was the owner or superintendent; but I know I got a letter in Norfolk that I was to call at Durban and fill my bunkers.

Q. Did you have any other experience with fire at all?

A. During the Boer War I was on the transport service, and we used to take coal when we were carrying troops and horses, the lower holds were free, so we used to put coal in our lower holds and work out on the passage home from South Africa, either home or to New Orleans, whichever way we were going for bunkers. About 8 days before I arrived in Cape Town, on one occasion my chief officer woke me up one morning about 6 and told me that we were on fire. He said we were on fire, and I said "Where?" and he said No. 2. I told him to close the hatches, and tarpaulin them down, those were the lower hatches, because we had horses on board, and then put a full set of hose which we had, into the holds and leave them in there, and in about an hour's time the hatches all blew off, and then we had nothing to do but to keep our hose in there. Well, I arrived in Cape Town, it was 9 or 10 days afterward, and I wanted all my horses discharged there, and the Colonel in charge of this, he asked me how long I had been on fire, and I told him 10 or 12 days, and he said, "You have kept it under this long; go around to East London and discharge them there". I got around to East London and then we took all the coal [fol. 268] from under these hatches into this deck and spread it out three or four feet high, where we had had the

horses, because we had the space then, and that was the action on that.

Q. Did you ever ascertain the cause of that fire?

A. No, I never ascertained the cause of it.

Mr. Keating: Now, I move to strike out the entire answer.

The Court: I should think that is the last thing in the world you would want to do. However, I will strike it out if you want.

Mr. Keating: I don't care one way or the other.

A. (Continued.) I cannot say what caused it.

By the Court:

Q. You cannot?

A. No; it was on fire; that was all I know.

Q. That is not an unusual thing, is it?

A. No, sir, it is not.

Q. Well, it is not unusual to have fires in coal without anyone ever being able to tell what caused them?

A. Fires vary in various classes of coal. That is what is known in England as North Wales coal, that is a coal which fires much more quickly than South Wales coal. The various mines vary.

Q. All bituminous?

A. Yes, always.

Q. How about American coal; does that fire easily as Wales?

A. It is considered about equal to South Wales coal, among seafaring people. South Wales coal is safer than North Wales. All coals vary in their spontaneous—their [fol. 269] propensity to ignite, the different kinds vary. That is what my experience has been.

By Mr. Jones:

Q. Did you ever have any experience with limbers in underneath the coal?

A. Limbers?

Q. Yes.

A. Yes, that is coal, that is this coal, three days after I left Durban, it was over the limbers, that is where it started.

Q. What is the limbers?

A. The limbers is the place in a British ship, they are not all the same, some of the American ships are not built that

way, they run right out to the ship's side. In British ships, the tank goes out and goes so far down and goes as you might call it to a drain along the ship's side.

Q. Gutter?

A. Gutter, if you like.

By the Court:

Q. Inside of the hold?

A. Between the ship's skin and the tanks, and if there is any water gets on your ceiling, it runs into this place and then it is pumped out from the limbers or the bilges.

By Mr. Jones:

Q. You say this fire started over the limbers?

A. Right over these limbers, this fire, after we left Durban.

Q. Was the limbers plugged up in any way?

A. Only boarded over, I supposed the coal would not get there, though it seems it often does get there.

Q. The air could get through the limbers?

[fol. 270] A. The dust comes through, and the air would go through, yes.

Mr. Jones: You may cross-examine.

Cross-examination.

By Mr. Keating:

Q. Captain, are you familiar with the practice in the Harbor of New York about carrying coal by using wooden bulkheads?

Mr. Jones: May I have my same objection to that, your Honor?

The Court: Yes, and objection is overruled and you may have an exception.

A. Carrying coal?

Q. Yes, carrying of coal.

A. How do you mean, carrying coal in the Harbor of New York? We do not carry it in the harbor; we load it in the harbor. Is that what you mean, sir? I want to get at what you mean.

Q. Yes, thank you very much; I want to make my questions clear. You will have to excuse me, Captain, if I ask a few absurd questions, to a man of your experience.

A. Thank you.

Q. What I am trying to get at is whether you are familiar with the practices of shipowners in the Harbor of New York, loading coal bunkers for the use of ships; have I used the correct term?

A. Well, I have loaded coal and I have taken bunkers on.

Q. I have asked you, Captain, are you familiar with the practice?

A. I don't know of any—I never worked for any American shipowner in the way of loading coal.

[fol. 271] Q. Have you ever worked for any shipowner?

A. Yes, but I have not for owners here.

Q. You have been around the Harbor of New York a great deal in these last few years as a marine surveyor, I know.

A. Yes, I have.

Q. Have you seen any coal loaded behind wooden bulkheads?

A. You mean bunker coal?

Q. Yes.

A. Yes.

Q. It is the usual practice, isn't it?

A. It is done at times, yes.

Q. Is it not, or is it, the usual practice?

A. No, I won't say it is usual; it is only on certain occasions.

Q. It is quite a common practice?

A. Well, it is done commonly on certain occasions.

Q. Now, suppose, Captain, I want you to answer this question, that when you got to Durban—is that the place where you took this additional coal, these additional bunkers?

A. Port Natal or Durban, it is the same thing.

Q. You were told to take some more bunkers there, were you?

A. I was told to fill up my bunkers, what I burned from Norfolk to there.

Q. Did you have bunkers that would have carried you through?

A. As far as I remember I think I would have had sufficient to carry me to Cavite.

Q. If you had been left to your own resources, would you have thrown that coal that you had taken on at Norfolk, away?

A. Never heard of a man throwing away coal, on board of ships.

Q. What would you have done with it, if left to your own resources?

A. Burned it.

Q. That is what you did, wasn't it?

A. Well, I don't just get what you are driving at.

[fol. 272] By the Court:

Q. He means, in regard to building up your bunkers at Natal.

A. Why would I throw it away?

Q. What would you have done with it?

A. Burned it in time; I don't exactly get your point here.

Q. Captain, listen, you had a certain amount on when you went into the harbor of Natal?

A. Yes.

Q. You were going to fill up?

A. Yes.

Q. What would you have done if the owner, the people that you were working for, had not given you any instructions, under that circumstances you would have burned it?

A. I don't know, I could not burn it all at once; I would have burned it in time, sir.

By Mr. Keating:

Q. Now, did you consider it proper to burn that coal that you had left, in time?

A. Yes, sir, I would — burned it in time.

Q. Would you consider it good practice on board ship, to sort of work out your bunkers alternately; is that what you call it? —would that be good ship practice?

A. What do you call the alternate?

Q. I mean that if you are going to carry coal out, actually carry out a coal from one bunker, would it be sensible thing for a chief engineer to do, to arrange it so that he

worked out his bunkers alternately, so that he used up his—he kept his coal in rotation, so to speak. Would you consider that good practice?

A. I cannot see it! I have never been in a ship that had [fol. 273] more than two bunkers or three at the very most, and any captain who would take it all out from one side, you might turn your ship over.

Q. Depend a little, would it, on the size of the bunkers?

A. Yes.

The Court: May I ask a question, will you excuse me for interrupting you?

Mr. Keating: Yes.

By the Court:

Q. What would you do, captain, if you had a mass of a couple of hundred tons, or three hundred tons of coal in your bunkers, and you had to put in more coal, because 300 tons was not enough to bring you where you wanted to go, you had to put in some more, what would you do under those circumstances?

A. Well, I know what I would like to do, but I could not always do it.

Q. What would you like to do?

A. I would like, if I were able, to put that coal where I could use it first, before I used the other coal; but you cannot always do that.

Q. You mean, to take it out of the bunkers?

A. If you have any other place to put your extra coal, to put it there so that it does not get mixed; but we have another rule aboard ship, "Obey orders."

Q. I am not talking about your matter at all; I understand that. But I would like to know what the wisest and careful captain would do under those circumstances?

A. He would keep the coal separate if he possibly could.

Q. And by "separate", do you mean to take it out of the bunkers and put it back, or something?

A. No, sir; if you have a separate bunker that you could [fol. 274] put it into, then you would; but if you were told to take in and put it in your bunkers, why, you get the orders, and you have to follow them.

Q. Suppose you had no other place you could put the coal that you had in, the 300 tons, that you had no other

place except the bunkers that it was in, and you had to take aboard some more coal, what would you do with the coal you had on board already?

A. In that case I would just have to leave it and put it over it, in a case like that.

Q. Is there any special treatment you would give it, or just cover it with the new coal?

A. No, sir, there is not.

Q. Nothing you can do?

A. Nothing you can do.

Q. Just dump it in?

A. Just dump it in.

Mr. Jones: If your Honor please, I think that is all I have for this witness.

The Court: Then we will adjourn until tomorrow.

Mr. Jones: I think I will probably rest and keep the rest of my testimony for rebuttal. I would like your Honor to consider the matter of letting me discuss it with my associates. I do not think that I care to offer any more evidence now, and I think I will probably rest as it stands now, and save the rest of my evidence until after I hear what my opponent has to say.

The Court: You will be faced with the objection, I suppose, on the part of your opponent, that you put your en- [fol. 275] tire case in now, that is, you put in all of your direct case, unless he is willing to let you do that; I don't know.

Mr. Jones: I think my direct case is made out, and any other testimony I shall have will be in the nature of rebuttal.

The Court: That is, it won't be cumulative of what you have offered now?

Mr. Jones: What I want to do is to find out what his witnesses are going to say, and then reserve these other witnesses.

The Court: That is what I will have to pass upon, your right to do that. I would have thought that the regular practice would have required you to put in all your evidence on your direct case and then anything that is strictly rebuttal could be put in after his case. If you have something that is admissible on your direct case, then I suppose it has got to go in now.

Mr. Jones: I think, if your Honor pleases, I have made out a case on direct. For the moment I am satisfied with it, and I would therefore prefer to hold my other witnesses here until after my friend puts on his case, and I will be in a position to rebut it, my understanding to be that my rebuttal will of course be directed to what he shall put in.

The Court: Yes, strictly rebuttal.

Mr. Keating: Do I understand you rest, then?

Mr. Jones: I will let you know that in the morning.

The Court: Then we will take a recess until 10:30 tomorrow morning.

[fol. 276] (Whereupon a recess was taken until Friday, November 8th, 1929, at 10:30 o'clock A. M.)

New York, November 8, 1929.

Met pursuant to adjournment at 10:30 A. M., present as before.

Mr. Jones: I am quite satisfied with my case, if your Honor please. I find I only failed to file a stipulation of facts, which I now file.

(It is marked Libelant's Exhibit 20 in evidence.)

Mr. Jones: I have rested my case, if your Honor please.

CASE FOR RESPONDENT

FREDERICK ELLISON, being duly sworn and examined as a witness for the respondent, testifies:

Direct examination,

By Mr. Keating:

Q. Mr. Ellison, are you a mariner?

A. Yes, sir, I am a mariner.

Q. How old are you, Mr. Ellison?

A. I am 37 years of age now; the 7th of April, 1892, I was born.

Q. How long have you been going to sea?

A. What—you mean to earn my own living?

Mr. Jones: Would you mind removing your hand from your mouth?

The Witness: Certainly.

[fol. 277] A. (Continuing:) You mean since I have left school?

Q. How long all told?

A. Since I was 15 years of age.

Q. And you have been to sea practically ever since, have you?

A. Ever since, sir.

Q. Do you hold any license?

A. Yes, sir.

Q. What license do you hold?

A. I hold a master's certificate.

Q. From whom?

A. English, the British Board of Trade certificate.

Q. Is it unlimited?

A. Any part of the world, yes, sir, unlimited.

Q. Before you got that master's certificate did you work yourself up from one grade to another?

A. Yes, sir.

Q. Were you the chief officer of the "Galileo" at the time she had the fire?

A. Yes, sir.

Q. How long had you been chief officer of the "Galileo" at that time?

A. I joined her December, 1925.

Q. Your home is in England, Mr. Ellison?

A. Yes, sir, in Hull, Yorkshire.

Q. Will you tell us generally what kind of a steamer the "Galileo" was?

A. Well, she was a general cargo ship.

Q. How many holds did she have?

A. She had six holds and six hatchways.

Q. A steel steamer?

A. Steel steamer, yes sir.

Q. Do you know what, about, her gross and net tonnage was?

A. I can't give it to you within a couple of ton; she was 4090 tons net register and about 6300 tons gross.

Q. Now, during the Spring and Summer of 1926 was there any unusual condition that you know of in England, about coal?

A. You mean the coal strike?

[fol. 278] Q. Yes.

A. Oh, yes, there was a coal strike in England.

Q. Had you served on any other of the Wilson Line vessels than the "Galileo"?

A. Yes, sir.

Q. What were they?

A. You mean the names of them?

Q. Yes.

A. I was on the "Morocco", the "Gautano", and the "Vigo".

Q. Had you been in that New York-Hull trade for some years?

A. No, sir.

Q. Was your experience on the "Galileo" the first time you were in this trade?

A. Yes, sir, in this country.

Q. Now, prior to June, 1926, that was the first time you coaled for the round in New York, was it?

A. That is right, sir.

Q. Prior to that time where did you take your coal on?

A. While I was on the ship we used to take it in England.

Q. And do you know the capacity of the bunkers, permanent bunkers, roughly speaking?

A. Not the permanent bunkers. I have nothing to do with bunkers.

Q. What parts of the ship used to carry the coal prior to June when you coaled for the round in England?

A. When we coaled in England, you are talking about?

Q. Yes.

A. After finishing up the permanent bunkers we used to put the remainder down in No. 3 lower hold.

Q. And when you got to New York what did you do with the coal that was in No. 3 lower hold?

A. The laborers come on board and they used to take it out of No. 3 hold and put it into the bunkers.

Q. Was that the usual practice on each voyage?

A. While I was on that ship, yes sir.

[fol. 279] Q. In June, what time did you arrive, in June?

A. I couldn't tell you what time.

Q. Look at the log and give us the exact date. I think we may as well be exact about this. (Handing witness log-book.)

A. June 21st.

Q. Now, upon arrival in New York on June 21st on that trip had there been a coal strike in England? Was the coal strike on at that time?

A. In England, yes, sir.

Q. Now, had you brought over any coal in that lower No. 3 hold on that trip?

A. In June?

Q. Yes.

A. No.

Q. At that time when you arrived was there any coal in No. 3 between decks?

A. No, sir, no, sir.

Q. What did you load in June, in No. 3 lower hold?

A. In June, in No. 3 lower hold—grain in the No. 3 lower hold.

Q. Did you have anything to do with the loading of that grain?

A. It was my job, sir, to see that it was well trimmed.

Q. And did they fill the whole hold up with grain?

A. Absolutely.

Q. After it was filled up with grain did you go down into the between decks, that is, over that lower hold?

A. I have to be down there to see that it is well trimmed. I was down there all the time.

Q. What did you do with respect to covering the hatch which leads from No. 3 between decks into the hold?

A. I battened it down.

Q. How did you do that?

A. I put the hatches on, those wooden things, you know.

Q. The wooden hatches?

A. You put the hatches on first.

Q. Yes, and then?

A. Then two tarpaulins over.

[fol. 280] Q. What did you do to the tarpaulins?

A. There was no lugs round the sides; I put battens, what we call cargo battens, we used them for dunnage, and I put down round the sides and nailed it down. I didn't do it myself.

Q. Who helped you?

A. I was down there helping. I was the chief officer, but I was there and the carpenter did it; I saw that it was done.

Q. I am still speaking of June. When you got done battening down the grain hold was there anything at that time in No. 3 between decks, in June?

A. Nothing at all, sir; it was all swept out.

Q. Will you look at these exhibits, which are Exhibits 10, 11 and 12, which were put in evidence by Mr. Jones, drawn by Mr. Bagger, and tell me whether in a general way those exhibits represent the position of the various places in the ship in the general neighborhood of No. 3 between decks, No. 3 shelter deck and No. 3 lower hold?

A. Well, it is my belief that this wooden bulkhead in the shelter deck is too far forward, the wooden bulkhead.

Q. Let us see which paper you are talking about; wait a minute.

(The witness is speaking of Exhibit 10.)

Q. Now will you indicate which one you think is too far forward?

A. It is my belief, that is in what I call the shelter deck. (The witness points to the bulkhead.) In my belief it is a bit too far forward.

Q. The wooden bulkhead which I have marked on there with an F is the one you think is a little too far forward?

A. Yes, sir.

Q. Is otherwise Exhibit 10 approximately correct, as far [fol. 281] as you can judge?

A. To the best of my knowledge I should say it is right, sir, that is, as far as I can tell.

Q. Now look at Exhibit 12 and tell us whether that is approximately correct as far as you can judge?

A. This is what I call the shelter deck?

Q. Yes—is that approximately correct?

A. Just a minute. I think it is correct within a few feet. Will that do?

Q. That is all right. Now will you look at Exhibit 11 and tell me whether that is approximately correct, that is marked lower between decks; you call that the between deck, do you?

A. Yes, sir; yes, sir.

Q. Is it too far forward or too far aft?

A. It is too far forward, if this is the shelter deck. (Witness indicates.)

Q. You are referring to Exhibit 12?

A. Yes. As I said in the first instance, that bulkhead was a bit too far forward. (Indicating F on Exhibit 10.)

Q. Other than that you think the things are approximately correct as far as you can tell?

A. As far as I can tell, sir.

Q. Now, Mr. Ellison, I show you Exhibit 10, which shows a profile plan of the "Galileo", and I want you to look at the space B and tell me the approximate dimensions of that space.

A. The approximate dimensions?

Q. Yes.

A. The approximate length of that is you mean from the bulkhead?

Q. Yes.

A. The approximate length of that is 33 feet, that is in the between decks, 33 or 34 feet.

By the Court:

Q. Do you mean from the bulkhead to the wooden feeder [fol. 282] in the back, or back of the steel bulkhead? From here to here, not from here to here? (Indicating.)

A. No, sir.

Mr. Jones: What he means is from C to G; is that correct?

By Mr. Keating:

Q. Is that correct?

A. Yes, sir.

Q. Now, how deep is No. 3 between decks from deck to deck, the space marked B?

A. How deep? Within a couple of inches it is 10 feet.

Q. Now, will you look at the bulkhead in Exhibit 10 marked G and describe that bulkhead to his Honor; the bulkhead marked G at the after end of No. 3 between decks? Just describe it.

A. In the way of the No. 3 hatch?

Q. Yes.

A. This hatch here, to the side of the coamings extending through the deck, it is of steel.

Q. You mean the bulkhead is steel in the way of the hatch?

A. In the way of the hatch.

Q. Now, what is on the other side?

A. On either side is wood, sir.

Q. Are there any openings in that wooden part on either side?

A. Yes, sir.

Q. What are they?

A. There is one door on one side, what I call a door, and one on the other side, one on each side.

Q. When you left New York in June what was on each side of that bulkhead, that is, the after bulkhead which you have just described?

A. When we left in June?

Q. Yes.

A. It was full of coal.

Q. On each side?

A. On each side.

[fol. 283] By the Court:

Q. Behind the wooden parts?

A. Behind the wooden parts, yes, sir, and in between decks on both sides, it was like one mess of coal.

By Mr. Keating:

Q. Was it also against the steel on each side?

A. Through the between decks?

Q. Yes.

A. No, it couldn't be, wood at the 3 between decks.

Q. Now, will you look at the bulkhead at the forward end, marked C in No. 3 between decks and describe that bulkhead to us?

A. The bulkhead in No. 3 between decks on the forward end?

Q. Yes.

A. I might not be a bit clear in my explanation—that wood bulkhead was composed of planks of an average width of 10 inches; the width of the planks was 10 inches.

Q. How were they laid?

A. They were laid close together vertically from deck to deck.

Q. One plank laid alongside of the other?

A. Absolutely close to each other, not laid alongside, but close up to each other; the edges of these planks in the first place had been planed smooth to make it a close fit, and jammed up close to each other.

Q. From deck to deck?

A. From deck to deck.

Q. Now, was there anything else about those bulkheads?

A. Where they meet on each side, on the forward side and the after side, there was what we call cargo bulkhead battens, one of the coal part and one on the after part over these seams.

Q. Where each plank met the other plank?

A. Where the two met.

[fol. 284] Q. And how were they put on the bulkhead?

A. They were run back, with wire nails.

Q. Was there one of those strips on each plank?

A. Absolutely.

Q. On the forward side of the bulkhead?

A. And on the after side too.

Q. Is there anything else about that bulkhead?

A. With the bulkhead itself?

Q. Yes.

A. Where it was at the deck head it had stiffeners right across on each side, you know, where it touches the deck.

Q. Yes.

A. On each side there was a thick piece of wood square, like a sort of a stiffener.

Q. On either side?

A. On either side at the top, and the same at the bottom; that is to strengthen the bulkhead.

Q. Now, in the June voyage did you put any coal in No. 3 between decks?

A. In the June voyage?

Q. Yes.

A. Yes, sir.

Q. Did you put some in the shelter deck also?

A. Yes, sir.

Q. Filled those spaces up?

A. Filled them up.

Q. Now, on the June voyage what was forward of the wooden bulkhead which separated No. 3 between decks from No. 2 between decks?

A. On the June voyage?

Q. Yes—was there any cargo there?

A. Oh, yes, there was cargo in the forward part.

Q. Do you remember at this time exactly what the cargo was?

A. Not on the June voyage, not on the June voyage.

Q. What was one of the purposes of putting up that bulkhead which separated the No. 3 between decks from No. 2 cargo space?

A. From No. 3 between decks——

[fol. 285] Q. From No. 2 cargo space.

A. What was the object of it?

Q. Yes.

A. To divide the space into two parts.

Q. Had it anything to do with the protection of cargo?

A. It certainly protected the cargo.

Q. Against what?

A. Against the dust.

Q. What dust?

A. The coal dust.

Q. Now, did you see the cargo discharged at the end of the June voyage out of No. 2 between decks where it had been against the bulkhead separating it from the coal?

A. I didn't see it discharged, but I was on the ship.

Q. You don't know whether there was any damage to it or not?

A. I should have known if there had been.

Q. You can only say what you saw yourself.

A. They told me everything was O. K.

Mr. Jones: Objected to, and I move to strike it out.

Mr. Keating: I consent to that.

The Court: Strike it out.

Q. Have you any job on the ship in that connection, with that particular bulkhead, have you any duties—what are your duties?

A. My duty is to see that that bulkhead is in good condition.

Q. Did you inspect it in the June voyage?

A. I did inspect it, sir.

Q. Tell us how you inspected that bulkhead in the June voyage.

A. In the June voyage before we put the coal in?

Q. Yes.

A. The between decks, you are talking about?

Q. Yes, No. 3 between decks.

A. I go in the between decks and I go closely over it along [fol. 286] with the ship's carpenter, I examine the bulkhead battens and see that there is none knocked off by perhaps cargo or slack, you know, and then I make it a practice of testing that by getting two or three clusters down with lights on, see?

Q. Yes.

A. And when it is dark, two or three clusters, I put down, and shine it on this bulkhead when I am on the other side; I get a couple of the crew to shine it on the bulkhead when I am on the other side, to see if there are any cracks or openings, for if there were I should see the lights in between.

Q. Did you do that on the June voyage?

A. I do it every voyage, sir.

Q. Did you do it on the June voyage?

A. Yes, sir.

Q. That bulkhead is not watertight, is it, that wooden bulkhead?

A. What do you mean by watertight, sir?

Q. Well, what do you mean by watertight?

A. I mean if you throw a bucket of water at it it wouldn't go through, but if there was a large volume of water on the side it would crush itself through, perhaps.

Q. What have you to say as to the bulkhead, about air passing through? Some air would pass through, wouldn't it?

A. Yes, some air would pass through.

Q. Would ventilation go through?

Mr. Jones: I object, if your Honor please; I don't know what Mr. Keating means by ventilation going through.

The Court: Objection sustained.

Q. Was that bulkhead so constructed to resist ventilation?

[fol. 287] Mr. Jones: Objected to.

The Court: Objection sustained. Strike it out.

Exception.

Q. Can you form any opinion, Mr. Ellison, as to whether there would be a large or a small quantity of air go through that bulkhead?

A. A very, very small quantity of air.

Q. Would a larger or smaller quantity of dust go through?

A. It was absolutely dust-proof.

Q. That was the purpose of the bulkhead?

A. Absolutely the purpose of the bulkhead.

Q. Now will you look at Exhibit 10. This thing that I point to with my pencil is what?

A. That would be the ventilator.

Mr. Keating: Can I mark that with the word "ventilator"?

The Court: Yes.

Mr. Jones: Is it marked on there now?

Mr. Keating: No. I marked it "Vent".

Q. Now, was there a ventilator on each side?

A. On each side, sir.

Q. Now, how far apart were those ventilators?

A. How far apart?

Q. Yes.

A. Well, from the hatch coaming to the side of the ship we will say in the center, as near as I can possibly estimate it was in the center from the side of the hatch coaming to the side of the deck, about half way from the hatch coaming to the ship's side.

Q. How wide is the deck on No. 3 between decks in feet, do you know?

A. If you will tell me the size of the hatchway I can tell you the size of the deck; the breadth of the hatchway?

[fol. 288] Q. 18 feet.

A. Say 6; I am not exactly sure, you know.

Q. You are not exactly correct? Well, don't tell us anything that is not correct.

A. Say 6 or 7 feet from the hatch coaming to the ventilator, 6 or 7 feet.

Q. Now, is that ventilator placed between any of the frames of the ship?

A. Between the frames? What do you mean, the deck frames?

Q. Yes.

A. Yes.

Q. How wide are they?

A. The deck frames, I couldn't exactly say the width of them.

Q. I think it was testified here they were 27 inches.

Mr. Jones: No, they were the frames. He is talking about the deck beams.

Q. You don't know the exact distance?

A. I don't know the exact distance.

Q. Now, do you know what the diameter of that ventilator is at the main or weather deck where it goes down below?

A. The weather deck?

Q. Yes, at the top.

A. Yes, I know.

Q. Well, how much is it?

A. It is 2 feet to 2 feet 2 inches.

Q. And then from there down it is slightly smaller, is it?

A. It is slightly smaller.

Q. How much smaller?

A. Well, from where the intersection is, 3 inches.

Q. Now, what is the diameter of the ventilator at the point where it goes down from the shelter deck into the between decks?

A. I would say one foot one.

Q. And it is smaller when it goes down into the ventilator?

A. Yes.

[fol. 289] Q. What kind of a ventilator do you call that?

A. I should call it a telescopic ventilator.

Q. The idea is that it ventilates only the top of each space?

A. It ventilates each space.

Q. From the top?

A. From the top, sir.

Q. Now, from the time you were on that ship in, I think you said, December, 1925——

A. Yes, I remember that well.

Q. Had they ever had, prior to this voyage, any coal in No. 3 between decks?

A. Not in No. 3 between decks.

Q. From about the June voyage, in which you loaded coal for New York, was that the first time they had ever put coal on the ship while you were on it?

A. In the between decks you are talking about?

Q. Yes.

A. Yes, sir.

Q. You were on the trip that you made from New York—when did you leave New York that June voyage?

A. On the June voyage—it was July 2nd on a Friday.

Q. July 2nd you left New York?

A. Yes, sir.

Q. Does your logbook show when you loaded that coal in New York on what I call the June voyage?

A. The June voyage, it is No. 3.

Q. No. 3 between decks?

A. It doesn't stipulate which is between decks.

Q. What date did you start loading in No. 3 hatch?

A. At 8 A. M. on the 28th of June we commenced loading at No. 1, 3 and 6 holds. No. 3 you are talking about? Yes, at 8 A. M. on the 28th of June, 1926.

Q. And when did you finish?

A. We finished at 1:15 P. M. on the same day.

Q. That is the between decks?

A. You are asking what time we were loading cargo; [fol. 290] this cargo I am talking about in the lower hold, we have got to load that first before we start on the between decks.

Q. I want you to tell the Court when you started to load the coal in No. 3 between decks and the shelter deck on what I call the June voyage; I don't care anything about the cargo.

A. At 7 A. M. on Wednesday, the 30th of June.

Q. And when did you finish—now, this is coal you are talking about.

A. I am talking about bunkers, yes. At 10:30 P. M. we completed the bunkering.

Q. On the same day?

A. The same day, the 30th of June.

Q. What day did you leave New York?

A. We left on Friday, the 2nd of July, sir.

Q. And you proceeded to where?

A. We proceeded to Hull, proceeded to sea.

Q. Now, when did you arrive in Hull?

A. We arrived in Hull on the 19th of June, 1926, on a Monday.

Q. Did you discharge the grain that was in No. 3 lower hold?

A. We discharged it, yes, sir, in Hull.

Q. How did you get at it?

A. Well, first of all, we had the men for to get this here coal from the between decks, to remove a certain amount of coal to get down to the hatch.

Q. How much did you take out?

A. We took enough out for the men to get down and start, we took quite sufficient, and more than sufficient, so as to keep a fair space for the men to go down and commence discharging the grain.

Q. And you took the grain out?

A. Yes, sir.

Q. I have now got you in Hull in July, 1926, and you have taken out your grain?

A. Yes, sir.

[fol. 291] Q. I want to know whether you loaded any new grain in Hull to come back to the United States?

A. No, sir.

Q. Was the coal strike still on?

A. The coal strike was still on.

Q. Now, you came back to the United States, did you?

A. Yes, sir.

Q. When did you arrive back in New York?

A. We arrived back in New York on the 17th of August, 1926, that was on a Tuesday.

Q. Did you, while the vessel was in the Port of New York—and I am now talking about the August voyage from here on—did you go down in the No. 3 between decks and No. 3 shelter deck?

A. Yes, sir.

Q. Was there any coal in the shelter deck remaining?

A. Yes, there was coal in the shelter deck.

Q. Was that coal that had been put on there in the June voyage that you described?

A. It was the coal that we took on in New York.

Q. Did you go down in the No. 3 between decks?

A. Yes, sir.

Q. Was there any coal in there?

A. Yes, sir.

Q. Can you give us a rough idea of how much there was?

A. Well, from going backwards and forwards down there I should imagine about 150 ton in the between decks.

Q. Now, how was that coal lying in No. 3 between decks as far as you could see?

A. It was lying—you mean the position of it?

Q. Yes.

A. From the forward wood bulkhead, as near as I can judge—what I have in my mind's eye, it was about 3 feet down from the deck head, the top of the coal, and it came down in a sort of a slanting pile.

[fol. 292] By the Court:

Q. To the forward bulkhead?

A. To the forward bulkhead, it came down in a slanting pile.

By Mr. Keating:

Q. The slanting pile led aft?

A. The slanting pile led aft, to the forward end of No. 3 hatch to within, we will say, 4 feet.

Q. Of the hatch coaming?

A. Of the hatch coaming.

Q. Now, when had that coal been put in the ship that was there, this 150 tons?

A. It had been put in in New York.

Q. When?

A. In June, I told you, when we finished bunkering.

Q. Did you load any grain on the trip that you left here in August, was any grain put in No. 3 lower hold?

A. Yes, in No. 3 lower hold.

Q. Did you supervise its loading?

A. I did sir.

Q. Tell us what you did with respect to the hatch looking from No. 3 between decks, leading down to the hold after the grain had been put in?

A. After the grain had been put in?

Q. Yes.

A. Well, I was down there to see them finish off with the grain, to start them, to see that it was well trimmed.

Q. By trimming you mean spreading it out?

A. Yes, sir.

Q. They put trimmers down there?

A. Oh, sure, they put trimmers down there; they have to have them, you know.

Q. Did you subsequently cover up that hatch?

A. I put the hatches on, put the two tarpaulins on, and [fol. 293] battened the thing down with battens round the sides, you know, and nailed the battens down.

Q. So you made that space tight?

A. I made it absolutely secure.

Q. The idea was to keep any coal dust out of the grain?

A. It was, yes, it was, sir.

Q. Look at your logbook and see if you can give me the date that you finished loading the grain and battened the hatch down.

(The logbook is offered in evidence and marked Respondent's Exhibit A of this date.)

A. Yes, I can give you the time and give you the date; that is, for the grain, you are talking about?

Q. Yes.

A. At 8:30 A. M. on Tuesday, the 24th of August, 1926, we commenced loading that No. 3 lower hold.

Q. That was grain?

A. Yes, sir.

Q. When did you finish?

A. At 4:30 P. M. on that same day we completed loading at No. 3 lower hold.

Q. Now, what day was it that you went down and battened down that hatch leading from No. 3 into the lower hatch over the grain?

A. It was on the same day, Tuesday, the 24th of August.

Q. Do you know what day that was?

A. When we finished the grain?

Q. When you went down?

A. I had to be down there to see that it was well trimmed.

Q. You were down there?

A. I was, yes, sir.

Q. Then you went down to see about this battening down of the hatch?

A. Yes, sir, with a carpenter and a sailor.

Q. Now, while you were down there doing that did any- [fol. 294] one come into that No. 3 between decks?

A. When I was battening down I remember, well the chief engineer, coming down.

Q. Anyone else?

A. Shortly afterwards the master came down.

Q. And what did you see them do, what was the chief engineer doing?

A. He was having a look around, looking around at his coal.

Q. And what did the captain do?

A. He came down and he asked me——

Mr. Jones: Objected to.

The Court: Objection sustained.

Q. Tell what the captain did.

By the Court:

Q. What you saw him do and not what he said to you.

A. He didn't do anything; he came towards me and spoke to me.

Q. Is that all? You can't tell us what he said?

A. It was about battening down.

By Mr. Keating:

Q. Did you see him looking at the work that you had done?

A. Yes, sir.

Q. Without telling us what the captain said, did you have a discussion about the battening down of the grain hatch?

A. Of the hatch, yes, sir.

Q. That was what you talked about?

A. Yes, sir.

Q. You had no conversation about the coal?

A. No, sir, not with the captain, no, sir.

[fol. 295] Q. Have you many duties with respect to the coal, the bunkers?

A. Not bunker coal, no, sir.

Q. Whose job is that?

A. That is the chief engineer's job, bunkers; I was mate of the ship.

Q. Do you know anything about bunkers particularly?

A. No, sir.

Q. You are not a college professor?

A. No, sir.

Q. You have never studied chemistry?

A. No, I have nothing to do with bunkers whatever. I go for cargo and see that it is stowed in good condition.

Q. You are the mate?

A. I am.

By the Court:

Q. Were you the first mate?

A. Yes, sir.

By Mr. Keating:

Q. Now, did you make any special inspection of the coal?

A. No, no special inspection of the coal.

Q. Did you sit on any of it?

A. I sat on it; that is what I had to do when I was battening the hatch.

Q. You sat on a part of it?

A. Yes, for the side of the hatch was very hot.

Q. Did you receive any severe burns on the place where you sat down?

A. No, I did not.

Q. Was there any fire in the bunker while you were there?

Mr. Jones: I object. The witness obviously can't know.

Mr. Keating: I think this witness is certainly qualified [fol. 296] to tell whether there was a fire.

The Court: Ask him where the fire was.

Q. Did you see any fire while you were there?

A. No, sir, no, I didn't see any fire.

Q. Did you smell any gas?

A. No gas whatever; I didn't smell it.

Q. They didn't load any coal while you were down there?

A. No, for I should have been buried if they had.

Q. Do you know whether there were any men in or out of No. 3 between decks on the voyage over from Hull, commencing July 19th, to New York?

A. In the between decks?

Q. Yes, were there any men there?

A. No, I don't know, I couldn't say.

Q. You were there?

A. I was right through it, right into the lower hold.

Q. Was there any other time later than the time you described when you were battening down the grain hatch that you were in the No. 3 between decks prior to the time they were loading some new coal in there?

A. No, sir.

Q. Was that the last time?

A. When I battened down and everything fixed off below, my job there was finished.

Q. And you went off?

A. I was off.

Q. Now, will you look at your logbook and tell me when they commenced to load the coal in No. 3?

A. We commenced bunkering at No. 3 between decks at 8 A. M., Wednesday, the 25th of August, 1926.

Q. And when did you finish?

A. We completed bunkering at 4 P. M. on Friday, the 26th of August, 1926.

[fol. 297] Q. Did you see them loading——

A. At 4 P. M.

Q. Did you see them loading that coal?

A. No, sir.

Q. You had other duties around the ship?

A. I certainly had, I had plenty of things to do.

(A second logbook is offered in evidence and marked Respondent's Exhibit B of this date.)

Q. Now, what was on the forward side of the wooden bulkhead which separated No. 3 between decks from No. 2 between decks on the August voyage?

A. On the August voyage, in the between decks?

Q. Yes.

A. On the forward part of the wooden bulkhead I spread separation covers on the forward part.

Q. What do you mean by those? What are they?

A. They are what I used for separating different shipments of grain.

Q. What are they made of?

A. They are made of, as near as I can tell you, they are about the size of a good sized tarpaulin, and they are made of—it is thicker than bagging, you know bagging, but it is thicker.

Q. Is it canvas?

A. No, it isn't canvas, it is more closely woven than bagging.

Q. It is cloth of some kind?

A. You can't call it cloth.

Mr. Jones: It is a kind of burlap?

The Witness: It is not a burlap.

By the Court:

Q. It is a fabric, something in the nature of bagging?

A. But it is thicker than bagging altogether, for bagging [fol. 298] would be no use for separating cargoes.

Q. Can you see through it?

A. Not if you hold it up to this light; if you hold it up to a very fair light, you couldn't see through it.

Q. Air can go through it?

A. Oh, yes, sir.

By Mr. Keating:

Q. What did you do with the separation covers, where did you put them?

A. I put them in the forward part of the wooden bulkhead in the between decks.

Q. Did you nail them on?

A. Yes, I nailed them on flat, right across on the forward part, that was before ever they started loading cargo.

Q. Before you started loading did you go down and look at that bulkhead in the No. 2 between decks?

A. On the forward part in No. 2 between decks, yes, sir.

Q. What have you to say as regards its condition?

A. Well, from my own opinion it was in very good condition, and from the time we took the cargo in Hull—no, it couldn't be that, it was the other voyage.

Q. Well, after you looked at this bulkhead, that is what you went down there to do, was it?

A. Yes, sir.

Q. Did you go over it all, or only a small part of it?

A. I went all over it.

Q. And then you put on the separation covers?

A. Yes, sir.

Q. Then what did you do?

A. I was down there and saw them start loading the cargo.

Q. What cargo did you put in and where did you put it with reference to the bulkhead, the wooden bulkhead in No. 2 between decks?

[fol. 299] A. In the forward part of the bulkhead, in the No. 2 between decks?

Q. Yes.

A. There was what we call zinc dross like ingots of it, like pig iron, that was put on the deck right across the ship.

Q. Where with respect to the wooden bulkhead?

A. Right close up alongside the bulkhead.

Q. All right; then what else did you put in?

A. We put cases of lard, sir.

Q. Anything else?

A. And cases of condiments, Heinz's tins.

Q. And how far up along the bulkhead, starting at the bottom of No. 3 between decks and going up along the wooden bulkhead how high did you pile the cargo?

A. I piled it to within 2 feet, or as near as I can say, 2 feet, from the deck head.

Q. And was that space in No. 2 between decks forward of the next bulkhead substantially full of cargo?

A. What did you say?

Q. (Repeated.) Was that space in No. 2 between decks forward of the next bulkhead substantially full of cargo?

A. Yes, sir.

Q. How many ventilators are there in that compartment, No. 2 between decks?

A. I couldn't say.

Q. I am still talking about the August voyage. Now, had any change been made in the bulkhead at the after end, that is, the steel bulkhead with the wooden wings, had there any change been made in that bulkhead from the previous voyage?

A. No, sir.

Q. Now, what was behind the wooden wings of that bulkhead when you left in August, what did you carry in the between decks? In other words, I want to know what was against the bulkhead on the after end of No. 3 between [fol. 300] decks, which, as I take it, is the steel bulkhead with the wooden wings, what was on the other side of that?

A. That is what I call the bunker space.

Q. That is part of the regular bunkers of the ship?

A. Yes.

Q. Was that full of coal?

A. To my knowledge it was, as far as I know.

Q. I show you, Mr. Ellison, what purports to be a cargo plan of the vessel, which is marked Exhibit 13, and ask you whether you recognize that as one of the cargo plans of the vessel?

A. Yes, that is a cargo plan.

Q. It represents the position of the cargo, as far as you know?

A. As far as I know, sir.

Q. Do you remember when it was you put the hatches on the main deck which leads down in the No. 3—the hatch covers? You had them off when you were loading?

A. Yes.

Q. You had to have them off?

A. Had to have them off.

Q. You put them back at some time?

A. Yes, sir.

Q. When did you put them back, do you recall?

A. Yes, sir.

Q. When was it?

A. When they completed bunkering, I told you that.

Q. When was it you sailed from New York? Look at your logbook and tell me when you sailed from New York.

A. We left New York on Saturday, the 28th of August, 1926, at 10:17 A. M.

Q. That is all right. Now, did you stop anywheres to take anything up?

A. We stopped in Gravesend Bay.

Q. When was that?

A. At 11:15 A. M.

Q. Did you do anything there?

A. Stopped there to pick up 86 cases of powder, gunpowder.

[fol. 301] Q. Gunpowder?

A. Gunpowder or powder, I understood it was gunpowder, for it was put in a specially constructed magazine.

Q. Then did you proceed to sea?

A. After we loaded the powder then we proceeded to sea.

Q. Who was it that first observed the smoke?

A. It was myself that observed the smoke.

Q. Where were you at the time?

A. I was on watch, sir.

Q. Tell us what you saw?

A. I was keeping watch on the bridge. I went on duty at 4 o'clock. It was my watch from 4 to 8.

Q. That is 4 P. M. to 8 P. M.?

A. 4 P. M. to 8 P. M. and 4 A. M. to 8 A. M., morning and afternoon, two watches a day.

Q. This was the afternoon watch?

A. That was the P. M. watch.

Q. What did you see?

A. I was walking backwards and forwards and I observed some smoke coming from the ventilator of No. 3 on the starboard side.

Q. What did you do?

A. I blew down the tube to the master, and he answered me, and I reported the matter to him.

Q. Then did he come up?

A. He came up immediately.

Q. Anybody else?

A. Then I sent down for the second officer to relieve me and then the second officer came to relieve me on the navigating bridge, and the master and myself went along to the ventilator.

Q. What did you do?

A. We got a few of the seamen, and while we were doing this the chief engineer comes along.

Q. You don't know how he came to be there?

A. No, I looked around and he was there.

[fol. 302] Q. All you know, he turned up?

A. I turned around and he was there.

Q. All right; what did you do?

A. Two or three seamen and myself, and whoever was in the vicinity, we unshipped the ventilator.

Q. You mean you took it off the deck?

A. Yes.

Q. All right. What happened next?

A. Then we looked down and——

Q. Was there much smoke coming out?

A. Smoke was coming out.

Q. Much or little?

A. Not much, just a little.

Q. And how did you look down?

A. I got a portable electric lamp, electric bulb, you know, on the end of the cable, and lowered the bulb down through

the ventilator, lowered it down so the light would shine around from the electric bulb, see?

Q. Yes.

A. And there not being so much smoke at first it was likely the electric light penetrated from the ventilator on the boat.

Q. You looked down?

A. We looked down, yes.

Q. What did you see?

A. I saw the smoke coming from the ventilator into the section of the ventilators from the between decks.

Q. How could you tell it was coming from the between decks?

A. From the light, and where it was coming out from the intersection.

Q. You mean you looked into the section that runs into the No. 3 between decks?

A. I looked into the section that runs into the No. 3 between decks.

Q. And you could see the smoke coming into the ventilator at that time?

A. Yes, sir.

Q. Did you lower it in?

A. Yes, sir, down to the grain.

Q. Was any smoke coming off the grain?

A. None at all.

[fol. 303] Q. Was there any doubt it was coming out of the ventilator in the No. 3 between decks?

A. No doubt at all, sir.

Q. What did you do next?

A. What did I do next?

Q. Yes, you.

A. I took a piece of ratline——

Mr. Jones: What is that?

Q. Is it r-a-t-l-i-n-e?

A. It is r-a-t-l-i-n-e.

Q. Is that the right way to spell it?

A. Yes, sir, but we don't talk about line; it is ratline we call it.

Q. All right; you are lowering a piece of ratline?

A. Yes, sir.

Q. What did you do next?

A. The light was down there and I guided it down, this piece of ratline, guided it down in between the intersections of the ventilators.

Q. What do you mean by the intersections between the ventilators?

A. The space where the coal was.

Q. Did you get the ratline down on the coal?

A. I got it right down on top of the coal.

Q. Go ahead; what happened next?

A. I put the ratline down and I left it down there, as near as I can say, approximately five minutes; that is as near as I can say.

Q. All right.

A. I pulled the ratline up and I looked at the end of it and that ratline was sort of black and just smoking slightly, just a little smoke coming from it.

Q. All right, what happened next?

A. Well, the master was there, and we sort of consulted——

Q. You had a consultation of officers?

A. Yes, sir.

[fol. 304] Q. Did you participate in it?

A. Yes, sir, with the master.

Q. And what did the master decide to do?

A. We decided to turn around.

Q. And did you do that?

A. And go back to the river, toward New York way. We turned around and proceeded back towards New York.

Q. Did you do anything to the ventilator after you turned around or before you turned around?

A. We covered that ventilator up.

Q. With what—what did you cover it up with?

A. Put a plug on it, a wooden plug, that fits in the—what do you call it—the cowl.

Q. The cowl?

A. We call it the cowl.

Q. Did you put one on the other end too?

A. Not for the time being.

Q. You eventually arrived back at Gravesend Bay, did you?

A. We eventually arrived back at Gravesend Bay.

Q. And discharged your gunpowder?

A. We discharged our gunpowder.

Q. Now, while you were on the way back did you do anything else?

A. I did, sir.

Q. What did you do?

A. I took off a couple of hatches from the after end on the starboard side of No. 2 weather deck.

Q. All right. What else did you do?

A. Put a small ladder down to reach on to No. 2 shelter deck hatches.

Q. All right; what did you do next?

A. I went down on the No. 2 shelter deck, on the starboard after corner of No. 2 shelter deck hatch; I took 2 or 3, I don't know whether it was 2 or 3, I will say a few hatches off the corner of No. 2 shelter deck hatch, starboard side. The master was with me; he had a torch.

[fol. 305] Q. A torch?

A. An electric torch. And I asked the master, I said, "Lend me that torch", and I crawled over the top of the boxes of cargo as far back as I could to flash the light to see if there was any signs of smoke, any signs of fire.

Q. Did you see any?

A. I saw no signs of fire whatever, and no signs of smoke.

Q. Now, that space that you crawled over was over the cargo that was loaded in what place?

A. Well, I went down, that was in No. 2 between decks.

Q. You were in No. 2 between decks?

A. Yes, I was in No. 2 between decks.

Q. So when you crawled over the cargo you were looking aft?

A. Towards the wooden bulkhead.

Q. And what did you see when you looked towards that bulkhead?

A. I didn't see anything.

By the Court:

Q. No sign of smoke?

A. No sign of smoke.

Q. And no sign of fire?

A. No sign of fire, sir.

Q. Did you feel any heat?

A. I did not feel any heat.

Q. These cargo screens that you mentioned, were they singed or scorched at all?
A. Not at all, sir.

By Mr. Keating:

Q. You crawled out of there eventually?
A. Yes, sir.
Q. Came up on deck?
A. Yes, sir, put the hatches on, of course, when I came up.
Q. And you proceeded back to Gravesend Bay?
[fol. 306] A. We proceeded back to Gravesend Bay, and we anchored in Gravesend Bay.
Q. And took off the gunpowder?
A. We got No. 1 derricks up, and the crew, the sailors and firemen, along with the other officers, also the master, we took the gunpowder out of the specially constructed magazine and placed it on the weather deck.
Q. You finally got it off the ship?
A. We finally got it off the ship.
Q. Were you glad to see it off?
A. Yes.
Q. You parted, without regret, with the gunpowder?
A. Yes, sir.

Mr. Keating: Now, Mr. Jones, I can shorten this business up a good deal if you are not going to make any point as to the efforts that were made to put out the fire and the fact that the fire caused this loss. Your Honor knows that this fire started and got worse and worse and finally reached such a point that they pumped so much water in her that she turned over and became a total loss.

Mr. Jones: I think we have already stipulated that, but I will give you any further stipulation.

Mr. Keating: So, if your Honor is agreeable, I will not go into all these lurid details that finally led to this unfortunate loss.

The Court: Oh, yes.

Q. To go back to this wooden bulkhead separating the No. 2 from No. 3, my associates point out that I asked you the length and breadth of the planks, but I forgot to ask [fol. 307] you the thickness. Will you please tell us the thickness of those planks?

A. The thickness was, let us see, as near as I can judge it was 3 inches. The thickness was 3 inches of the planks.

By the Court:

Q. 8 inches wide?
A. 10 inches wide and 3 inches thick.
Q. Did they vary? Were different ones wider than others?
A. They might vary a little.

By Mr. Keating:

Q. Did the thickness vary at all?
A. Oh, I thought you meant about the width varying. No, the thickness of the planks didn't vary; they were standard thickness.

By the Court:

Q. What were they attached to on the top and the bottom?
A. The planks?
Q. Yes.
A. They were jammed tight in to the deck below and on each side of the plank there was——
Q. No, no, on the under side of the shelter deck what were they attached to?
A. On each side there was a sort of a beading running across each side in a slot.
Q. Is that a permanent thing, that slot?
A. Yes.
Q. Was that metal?
A. No, sir, it was of wood.
Q. And how about the between deck?
A. On the deck itself, what we walk on, it was about the same.
Q. About the same thing?
A. Yes, sir.

The Court: All right.

[fol. 308] By Mr. Keating:

Q. That slot consisted of two pieces of wood, did it?
A. Yes, sir.

Q. Is that part of the sill that these gentlemen were talking about? Some of these photographs show a sill. If I showed you that picture, do you think you could tell us if that is part of the sill?

A. I think I could.

Q. As near as I can make out, these three photographs, Exhibits 1, 3 and 14, show a piece which Mr. Bagger marked in each case with "sill piece". Look at Exhibit 3 and look at the point on the photograph marked D by Mr. Bagger, marked "sill piece"; is that part of the sill, or can you tell us? Tell us just what it is.

Mr. Jones: If he doesn't know, let him say so.

Q. If you don't know, Mr. Ellison, say so. If you do know, tell us what you know.

A. I couldn't say; I couldn't say on that. When were these photographs taken?

Mr. Jones: They were taken after the boat was raised.

The Witness: Well, the ship was under water.

Q. Well, will you look at Exhibit No. 1, and you will notice that somebody has written on the face of this photograph "piece of sill"? Will you tell us whether you can identify that as a piece of the sill, or if you can't, say so?

The Witness: This is an enlarged photograph?

Mr. Jones: No, it was taken that size.

A. I cannot.

[fol. 309] Cross-examination.

By Mr. Jones:

Q. Mr. Ellison, will you tell me the size of this sill?

A. The size?

Q. Or slot. You had two pieces of wood, I don't know whether you had a piece that was long enough to go from one side of the ship to the other, so it was possibly made up of several pieces?

A. Yes, sir, that is right.

Q. Each piece must have had three dimensions. I want those three dimensions.

A. I can't give you them exact.

Q. Give it to the best of your ability.

A. Can I judge by this? (Pointing to a ruler.)

Q. Oh, surely.

A. I should say they was 10 inches.

Q. I will call that wide; that rested on the deck.

A. 10 inches that rested on the deck.

Q. And how high? We will call the next dimension high.

A. This way? (Indicating.)

Q. Yes, that is all right.

A. I should say 6 inches on the outer edge, see; then it sort of comes down a bit.

Q. What do you mean, sort of comes down?

A. Have you a bit of paper?

Q. Do you want to draw it out for me? Here is a pencil and paper.

A. (Witness makes a diagram.)

Q. Shade the portion which consists of wood, Mr. Ellison, so we will know just what it is.

A. (Witness does so.)

Q. Was there any piece of wood on this side?

A. Yes, sir.

Q. Now, is this the top or the bottom?

A. Both top and bottom.

Q. Now, so that I will understand, the shaded portion, [fol. 310] as nearly as you can recall, indicates the wood?

A. Yes, sir.

Q. And as I understand it, the width of the deck at the place I mark A to the place I mark B was 10 inches?

A. That is as near as I can say.

Q. That is as near as you can recall. I am not asking you to perjure yourself, I am only asking you to tell me what you think. And from B to C it is how much?

A. 6 inches, and that sloped down here.

Q. It sloped down from B to C. Could you tell me what that dimension was, from A to B?

A. This is 10 inches, and that is 6 inches.

Q. And from A to D is 9 inches?

A. I think so.

Mr. Jones: The witness has drawn a sketch showing the position of the two pieces of wood which formed the slot, and I have placed around one of the pieces of wood the letters A, B, C, D, and put around the other shaded portion indicating the other piece of wood, A′, B′, C′, D′. The

witness says that the dimensions of the pieces of wood were as follows: From A to B, 10 inches; from B to C, 6 inches; and from A to D, 9 inches.

Q. Now, the dimensions of the other piece of wood, which is marked A′, B′, C′, D′, is the same?

A. Yes.

Q. And that was the situation on the deck both with respect to the top and the bottom of the bulkhead?

A. Yes, sir.

Mr. Jones: I ask that the sketch be marked in evidence.

(Marked Libelant's Exhibit 21 in evidence.)

[fol. 311] Q. How did you fasten the pieces of wood which formed the slot to the deck?

A. To the deck?

Q. Yes.

A. I didn't fasten them at all.

Q. I thought you said this bulkhead was built under your supervision.

A. No, I didn't say it was built under my supervision; I said the slots were there.

Q. The slots were there in the first instance?

A. In the first instance.

Q. So you never examined to see how it was fastened; it was part of the permanent work on the ship?

A. Yes, sir.

Q. How was the deck constructed? Was it constructed of plates of steel?

A. Yes, sir.

Q. And I suppose constructed as the ordinary steel deck is constructed, that is, the plates overlapped and then riveted together at the places where they overlapped?

A. Yes, sir.

Q. Did you observe that these pieces of wood that constituted the sill rested on this deck at the place where the deck overlapped?

A. Did I see that they were there?

Q. Yes.

A. Yes, sir.

(Adjourned until 2:15 P. M., November 8, 1929.)

November 8, 1929—2 o'clock P. M.

Trial Resumed

FREDERICK ELLISON resumed the stand.

Cross-examination.

By Mr. Jones (continued):

Q. Mr. Ellison, just before the lunch recess we were talking about the slot which you were kind enough to illustrate [fol. 312] with me by the drawing which is Exhibit 21.

A. As near as I could possibly do it.

Q. Yes, I understand that. I understood you to tell me that the slot consisted of these two pieces of wood which you have drawn (indicating).

A. Yes, sir.

Q. Indicating the size on this drawing.

A. As near as possible.

Q. As near as possible?

A. Yes.

Q. And these two pieces of wood were laid on the deck?

A. Yes.

Q. Were they locked underneath or not, or anything like that?

A. As I mentioned before, these bulkheads were in the ship when I joined the ship, and put in by a shipwright carpenter. I could not say; but I know, if I was doing it, I would bolt them to the deck.

Q. You would bolt them to the deck, the sills?

A. Certainly I would bolt them to the deck.

Q. How did you put the planks in the slot—slide them in?

A. I could not tell you, sir; as I say, they were in there when I joined the ship.

By the Court:

Q. The planks, the uprights?

A. The uprights were there sir, that is a part of the bulkhead.

By Mr. Jones:

Q. When you joined the ship, the bulkhead was already in place?

A. Yes, it was erected, fixed at that time.

Q. So you don't know how it was put in?

A. No.

[fol. 313] Q. Now, do you know whether or not they were planed?

A. Planed?

Q. Yes; how did you know that?

A. Because I know that by putting on these here bulkhead battens.

Q. All that you know was that you could see that the boards were very close together?

A. Very close together.

Q. You don't know whether they were planed or not, you could not say, but just that they were close together, the edges of the planks were close together?

A. You can tell by the lay of the plank. If you put two unplaned planks together, and two planed planks together, you can tell the difference.

Q. Do you know when this bulkhead was put in the ship?

A. No, sir; as I told you, it was in when I joined the ship in December.

Q. I have got a note here—it must be wrong about this—but my note said that the carpenter constructed the bulkhead under your supervision.

A. No.

Q. I must be wrong.

A. Yes, sir; I meant to say it was the other carpenter put that up, and my carpenter used to nail this here bulkhead battens down if there was any knocked off.

Q. When did you join the ship?

A. In December, 1925.

Q. So that the bulkhead was in the ship at that time?

A. It was in the ship at that time; yes, sir.

Q. That is, in December, 1925?

A. In December, 1925.

Q. Do you know whether or not the planks were nailed to the pieces of wood shown in Exhibit 21?

A. Were nailed to the pieces of wood?

Q. Yes.

A. No; I could not say.

[fol. 314] Q. You don't know?

A. I could not say, sir.

Q. Now, did you nail the battens over the cracks?

A. If there was any battens knocked off, like on the fore part or the after part, I always used to have a stack of these bulkhead battens, and it was my place just to look around, and if there was any knocked off, to see that the carpenter put them on.

Q. The only battens that you nailed on were battens you replaced—those that you found missing?

A. Yes, sir.

By the Court:

Q. Were there any battens on the coal side, the bunker side, of the bulkhead?

A. I said before on the aft side and the fore side, yes, sir.

By Mr. Jones:

Q. Now, these battens are like strips of wood, are they not?

A. They are like strips of wood.

Q. Can you give us an approximate idea of their dimensions?

A. Approximately?

Q. Yes.

A. From 3 to 3½ inches in width, and a quarter of an inch in thickness.

Q. A quarter-inch in thickness?

A. Yes, sir.

Q. I imagine you nailed them on with wire nails?

A. With wire nails; yes, sir.

Q. How close together did you put the nails? Can you give us any estimate?

A. I could not.

Q. 6 inches, or 1 foot, or what?

A. It would be closer than that.

Q. Closer than 6 inches?

A. Yes, closer.

Q. How much closer than 6 inches would these be nailed in?

A. One on this side (indicating), and one on this side (indicating).

[fol. 315] Q. Yes, I understand, you put one on one side of the batten and another on the other side of the batten?

A. Yes.

Q. Now, when you would put those two nails in there, you would not put two nails only in the whole long strip?

A. Oh, no.

Q. What I want to know is, how close together you would put them.

By the Court:

Q. The nails were not opposite to each other on the batten? He said that they were like this (indicating).

Mr. Jones: Staggered?

A. Certainly—zig-zag.

By Mr. Jones:

Q. That is what I wanted to get at. I understand you have your nails staggered?

A. Yes.

Q. Up and down on the batten?

A. Yes.

Q. What I want to know is, how far was it from the—you have two nails, both on the same side of the batten?

A. Two nails, both on the same side of the batten.

Q. What would be the distance between those two nails?

A. On one side would be an inch.

Q. An inch between the two nails?

A. An inch between the two; that is, to the best of my knowledge.

Q. That is to the best of your knowledge now.

A. Yes, sir.

Q. Now, I also understood you to say that you took a light and put it on one side of this bulkhead and looked to [fol. 316] see if you could see the light shining through.

A. Yes, sir.

Q. You did that on what date?

A. I did it before we put the coal in.

Q. You didn't do it after that?

A. Could not do it.

Q. Because the coal was there?

A. Because the coal was on the other side I could not do it, I could not.

Q. You were not given any instructions by anybody as to how these bulkheads were to be constructed, because you had nothing to do with the construction of them?

A. No; it was in the ship at the time.

Q. Them, except that you saw those bulkheads there?

A. I saw them there, those bulkheads there, and it was my job to see it was as it should be.

Q. You told us about some cargo separators, as you described them.

A. Yes, sir.

Q. Is that it?

A. Separation covers.

Q. Separation covers?

A. Yes, sir.

Q. You don't know exactly what the material was; you described it as bagging?

A. No, I didn't say it was bagging; I said it was thicker than bagging, more closely woven.

Q. Do you know whether it was cotton, or jute, or what material it was made of?

A. I could not specify the stuff.

Q. You don't know?

A. If I would see it, I could tell you.

Q. But you could not now tell us what it was made of?

A. No, I could not tell you, sir.

Q. Then you said you took these pieces, which, as I understood you, were about the size of a tarpaulin?

A. About the size.

[fol. 317] Q. That you would put over a hatch?

A. Yes, sir.

Q. And that thing was—you would not think one piece would be sufficiently large to go from one side of the ship to the other?

A. No, sir, it was not, no.

Q. It also would be true that the width of the piece would be greater than the height of the compartment; isn't that so?

A. The width of the piece?

Q. Yes.

A. Yes, it would.

Q. How did you fasten that piece of material which you have described to us, to the bulkhead, with nails?

A. It took three of us.

Q. Three of you working?

A. Three of us working.

Q. I am not interested so much in the man power as I am interested in the method that you three used in fastening the material to the bulkhead. I wish you would tell us just how you did that.

A. This bulkhead batten I was telling you about, I would put the cloth on at the top——

Q. You nailed it there?

A. And put the bulkhead batten over the cover—the cover is in between that bulkhead batten and the bulkhead, the cover is; this here bulkhead batten is outside the cover, and as it is to be made fast, we nailed it on to keep it fastened on.

Q. Around the top?

A. From the top.

Q. Then as I understood you, you put this batten both on the No. 3 side over any cracks, and then you took this piece of material that you have, that you call a cargo separation cover——

A. Yes, sir.

Q. —and put it on the bulkhead?

A. Yes, sir.

Q. And then you took a batten and put around, along the edge?

A. Not around the edge.

[fol. 318] Q. Where did you put it?

A. I said around the top.

Q. Around the top?

A. So it would not fall down.

Q. You didn't put anything around the bottom?

A. Not on the bottom.

Q. Nor did you put anything on the sides?

A. Not on the sides.

Q. So that the only fastening that you put on the separation cover, was a batten at the top of the bulkhead?

A. I put more than that, sir.

Q. What else did you put? That is what I want to get.

A. You got one here of these covers; one would not go across.

Q. Yes.

A. And we put another one; it would take at least two; and where those covers overlapped, so to keep them closed

together, I put a batten down, see, from the top to the bottom.

Q. Now, then, so I can get it quite clear and quite correct, and if I am wrong about it in any way I shall thank you to fill it in.

A. Fill in what, sir?

Q. Tell me something else you did, if I don't mention everything you did in respect to putting up that cover.

A. I see.

Q. You took the cover.

A. Yes, sir.

Q. You required two or more to go from one side of the ship to the other?

A. Yes, two or more covers; yes.

Q. And then you fastened that by battens at the top?

A. Yes; at the top.

Q. This batten you nailed to the planks?

A. Yes, sir.

Q. That is, to the planks that made up the bulkhead?

A. That is right, sir.

Q. Then where the covers overlapped, you took a batten [fol. 319] and fastened that down at the place where they overlapped?

A. Yes, sir; that is right.

Q. Were there any other fastenings that you used to hold these separation covers in place?

A. There was no other place, no, because as long as it was flat alongside of the bulkhead.

Q. That is all that you did?

A. Yes.

Q. I show you a picture which has been marked Exhibit 8, and I direct your attention to a plank which appears on the right hand side of the picture, and ask you whether or not that plank was the type of plank which was used in the construction of this bulkhead?

A. I could not say.

Q. You don't know?

A. I don't know, sir; I could not say.

Q. Do you know whether or not the wood used was oak, pine, or what it was?

A. I could not specify the wood.

Q. You don't know?

A. I could not specify the wood; I would, if I was a carpenter.

Q. Now, as I understood you in your testimony to Mr. Keating, the two ventilators which are shown on Exhibit 11, are the only two ventilators in your No. 3 compartment?

A. Yes, sir.

Q. Then I am correct in stating, am I not, that you had nothing to do with the placing of this bulkhead or the method of its construction or anything about it which was already in the ship, when you joined the ship?

A. Exactly, sir, exactly.

Q. Now, you have stated that there was about 150 tons of old coal in the ship when you got here in August, 1926. The master, in a letter which has been put in evidence, states that there was about 160 tons. You would not say there was not as much as 160 tons?

A. Ten ton difference?

[fol. 320] Q. Yes.

A. In a place like that, you could not judge to ten tons.

Q. You would not say that the master is wrong on that?

A. No; you cannot judge to ten tons in a place like that.

Q. I show you Exhibit No. 13, and direct your attention to what apparently is a door in the wooden bulkhead, in the aft part of the compartment; and I ask you whether or not you remember such a door being in that bulkhead.

A. Do I remember that door?

Q. Yes.

A. I do remember it.

Q. Where did that door lead to?

A. That door led—you are talking about the 'tweendecks now?

Q. Yes.

A. That door led into the bunkers.

Q. Into the bunkers?

A. Into the bunkers.

Q. Was that used as a passageway?

A. If necessary it was, yes, sir. I thought you were going to ask me something else as well.

Q. Was there any coal piled against that door, or was the door kept so that you could open it so you could pass through?

A. That door was made so that when they—this is the bunkers, isn't it?

Q. Yes.

A. That when the permanent bunkers is out—after the permanent bunkers were out, we used—it was so that that door could be taken down and we could have access to that coal in that cargo space—we had the coal in the cargo space, you understand that?

Q. Yes. What I want to get at is this: I show you Exhibit 11, and I direct your attention to the wood bulkhead at the point "B" as shown on the exhibit.

A. Yes.

Q. Then that runs from the hatch coaming over to the side of the ship, that wood bulkhead?

A. Yes.

[fol. 321] Q. There is a similar wood bulkhead on the other side of the ship running from the hatch coaming to the other side of the ship?

A. Yes.

Q. One on the port side and one on the starboard side?

A. That is right, sir.

Q. That bulkhead, apparently, according to the photograph, was constructed of pieces of wood which ran parallel to the deck.

A. Yes, sir.

Q. That is correct, isn't it?

A. Yes.

Q. And I direct your attention to the word "Passage" that appears on this drawing, Exhibit 11.

A. That is right.

Q. And I ask you whether or not that those passages were in that position, if you remember it.

A. Were they in that position?

Q. In the position as shown on this drawing? Is that your recollection as to that?

A. That is my recollection.

Q. That is the way they were?

A. In my recollection.

Q. Was this door in place when you left New York on August 28th, 1926?

A. That door was in place, sir.

Q. That door was shut?

A. The door was shut.

Q. Did you have coal piled on the other side of the door here?

A. Clear up here (indicating).

Q. Here is what I mean to say: Did you have coal piled on the forward side of the door as well as the after side?

A. On both sides.

Q. On both sides of the door?

A. Yes; on both sides.

Q. Now, what kind of a door was that?

A. What kind of a door?

Q. A wooden door?

A. Wooden door.

Q. On hinges?

A. No, sir.

[fol. 322] Q. How did it work, or how was it—what sort of a door was it? That is what I want you to tell me. You say it is not on hinges.

A. I mean—this is over three years ago already now.

Q. I want you to give me your best recollection, that is all.

A. I am telling you now, this is such a long time ago.

Q. Well, now, do you remember what kind of a door you had there?

A. I have a faint recollection.

Q. Give us your best recollection.

A. I will give you my best recollection.

Q. Your best recollection of the type of door that you had in that place.

A. It was a wooden door of the same sort of wood as the bulkhead.

Q. That is, a roughly constructed door of the same rough construction as appears on the photograph which I showed you before, made of planks as appears on the picture at the point "B"?

A. The planks where the man has his hand.

Q. And the door that formed—which you put in to close up the passageway, was made of the same type of plank?

A. Exactly.

Q. As shown on this picture?

A. As those planks there that that man has got his hand on.

Mr. Keating: What exhibit is that?

Mr. Jones: That is Exhibit 4. And this other one which I called "13", I made a mistake; it should be "3".

The Court: Steel bulkheading, that is what this is (indicating)?

Mr. Keating: That is correct.

Mr. Jones: Behind the feeder?

Mr. Keating: Yes.

[fol. 323] Q. I show you Exhibit 3, which shows the door also, and the planks; there is the door (pointing)?

A. Where?

Q. Right there (indicating).

A. The space for the door? That is not a door.

Q. That is not a door, the door itself?

A. It is a space.

Q. I understand. The door which you used to close that space, was made of the same type of planks as shown on this exhibit at the point "B"?

A. This here (indicating)?

Q. Yes.

A. The same as the bulkhead.

Q. And around the edge of the door the same as the bulkhead?

Mr. Keating: The frameway of the door.

A. Now, the frameway of the door, and the door, were the same kind as the bulkhead.

Q. Those planks, as I understand you, were used to make that door, these were planks which ran parallel to the deck just as your bulkhead ran parallel to the deck?

A. Yes, sir.

Q. How are those planks fastened together to make it solid as a door?

A. I could not say.

Q. You could not remember?

A. I could not say, sir.

Q. How was the door kept in place? You say it was not on hinges, but it would not stand up there by itself, it would have to be held in some way.

A. I have not the faintest recollection of that.

Q. Have you any recollection at all as to how it was held in place?

A. No.

Q. By bars or bolts or what, do you know how it was held [fol. 324] in place?

A. I could not really remember, sir.

Q. You don't remember?

A. No, I could not remember.

Q. Were you ever given any instructions by anybody with respect to the bulkhead in the aft part of the compartment, that is, the bulkhead which has these two doorways in it that we have been talking about? Did anybody give you any instructions with respect to that bulkhead?

A. What sort of instructions?

Q. Any instructions of any kind. If so, tell us what they were.

A. No, I have never had any instructions from anybody.

Q. Not from anybody?

A. No.

Q. Of any kind?

A. Of any kind.

Q. Either with respect to that bulkhead or the bulkhead for the forward part of the compartment?

A. As I told you, it was my place to see only about the bulkhead battens, to see they were up properly.

Q. Did anybody give you any instructions about their being made dust-proof?

A. No; it was my place as chief officer of the ship, to see that they were dust-proof.

Q. That is all you know?

A. That is all I know.

Q. Nobody gave any instructions, and you got instructions from nobody, with respect to that bulkhead?

A. No.

Q. You were the responsible officer of the ship for the condition of the bulkheads?

A. I was responsible for the condition and the way the cargo was turned out in Hull.

Q. I believe you said you knew nothing about coal, its properties, or how it should be stowed.

A. No, I don't know anything about it.

[fol. 325] By the Court:

Q. This wooden bulkhead, the forward bulkhead, No. 3, how was that arranged with reference to the frames of the ship, when you get over to the side of the ship, did it go between the frames, the two frames?

A. I don't remember that, sir.

Q. Or did it go to the edge, between the frames?

A. I don't know, really, about that, sir.

Q. Apparently, from this photograph, it would be impossible for that wooden bulkhead that had the bulkhead battens on it, and the cargo separator, it would be impossible for it to go over along to the skin of the ship.

A. What would be impossible—for the bulkhead to go?

Q. Yes.

A. Oh, no.

Q. On account of the horizontal beams?

A. They are not beams.

Q. What are they?

A. They are wooden cargo battens.

Q. What?

A. Wooden cargo battens; that is not iron at all; that is wood, what we call cargo supporters, that is to keep any bales or anything like that, when we stow any bales, any cargo in the holds, that is to keep them from the side of the ship in case of sweating, you know, that is what the cargo battens are for.

Q. You don't remember whether the bulkhead went through these cargo battens?

A. Yes, I remember that.

Q. They did go through it?

A. Oh, yes, they went through to the skin of the ship. That is, I say, I could not say how they were fixed.

Q. They went through, these cargo battens?

A. They went through over here to the skin of the ship, to the shell plating, as we call that.

[fol. 326] By Mr. Jones:

Q. Now, you have produced the log-books and I assume that those log-books are in your handwriting as chief officer?

A. That is right, sir, you will see it is the same handwriting right through.

Mr. Jones: I offer in evidence Exhibit A for Identification of the respondent.

(Same received in evidence as Exhibit A.)

Q. And may I see the other log-book, please?

A. (Producing.)

Mr. Jones: And I offer in evidence the log-book which has been marked Exhibit B for Identification.

(Same received in evidence as Exhibit B.)

Q. Now, I show you Exhibit No. 1, and call your attention to what apparently is—I shall call it a step on the ship's side as appears in this picture.

A. Yes.

Q. And I ask you how the bulkhead was fastened at that place, if you know.

A. I could not say, sir.

Q. Well, it is quite obvious——

A. And as I say, I could not explain it to you; I am not a carpenter. These bulkheads were all complete in the ship, when I joined her, and I am not a proper shipwright carpenter, you understand that to know.

Q. You have no recollection at all how that was?

A. No, sir, I have not, I have no recollection at all, but there is a piece of sill.

[fol. 327] Q. Do you remember that there was a piece of sill, two pieces of sill, here, that went from one side of the ship to the other?

A. Yes.

Q. And so far as you could see, the planks were in between those two pieces of sill, which acted, as you described, as a slot?

A. Yes, sir.

Q. And that was at the top as well as the bottom of the bulkhead?

A. Yes.

Q. With ordinary plank, running up and down?

A. Up and down.

Q. You don't remember whether the planks were made of oak or pine or what the kind of wood it was?

A. I don't know what sort of wood it was.

Q. All that you can tell me is that it was wood?

A. Wood.

Q. Did you observe anything on the ship's skin which was used to hold the bulkhead in place?

A. On the shelf plating, you mean?

Q. On the shelf plating.

A. There was some erections there, but I could not explain how they were.

Q. Were they wood?

A. They were wood, yes; but I could not explain how they were fixed on, or what.

Q. But you do remember they were wood?

A. I remember they were wood, all right; I say that, I saw them.

Q. Was there a slot there?

A. It was a sort of a slot affair, fixed up on the side.

Q. I believe you told me that the wooden bulkhead was in the ship, when you joined the ship, in December, 1925?

A. That is right, sir.

Q. And you also said, I think, in answer to questions by Mr. Keating, that you carried no coal in that No. 3 space [fol. 328] before what we described to you as the June voyage of 1926. Am I right about that?

A. That is quite right.

Q. What did you use that space for before June, 1926, which was there from December, you know, until June—what did you use that space for before this?

A. We used it for general cargo.

Q. General cargo?

A. Case goods, light goods.

Q. You carried cargo in that space before?

A. Yes, sir.

Q. So the space was not constructed for the purpose of using it as a bunker, was it?

A. As a bunker?

Q. I say, it was not constructed to be used as bunkers, because you never used it as bunkers, it never had been used as a bunker so far as you know, before June, 1926?

A. I don't know whether it had been used for bunkers or not; not while I had been in the ship.

Q. So far as you know, it never had been used?

A. So far as I saw.

Q. But it was used as a cargo compartment?

A. For cargo.

Q. Now let us come back to this after bulkhead again. You said that was made of pieces of wood which were parallel to the deck?

A. Yes, sir.

Q. Can you give me any idea of the approximate sizes of those pieces of wood?

A. The approximate sizes of the pieces of wood forming the bulkhead?

Q. How wide were the pieces of wood?

A. The same as I said on the forward ship's bulkhead.

Q. The same sort of bulkhead?

A. The same bulkhead construction.

Q. The difference being that the pieces of wood were laid parallel instead of vertical?

A. Instead of vertical, yes, sir.

[fol. 329] Q. By "parallel", I mean parallel with the deck of the ship.

A. Yes, sir, I understand you.

Q. Were any battens used on that bulkhead?

A. Yes, sir.

Q. And did you use any cargo separators, separation cloths, on that bulkhead?

A. Not when the coal was not there.

Q. So you had nothing on that bulkhead at all?

A. Only the battens.

Q. Only the battens?

A. The battens were left there.

Q. Now, about these battens which you say you had along the top of the cargo separation covers to hold the covers in place, what was the dimensions of those battens?

A. I said they were bulkhead battens, sir.

Q. Now, can you tell me, they were pieces of wood, I suppose?

A. I said, I indicated them to be the same as the bulkhead battens. I explained to you before the size and I explained to you what the bulkhead battens are, and the size.

Q. Then, as I say——

A. (Continuing:) It was one of those bulkhead battens, as I explained to you before.

Q. You put them on there?

A. That is right, sir.

Q. Parallel to the deck, the same sized battens as you described before?

A. Yes, and as fastened with ordinary nails.

Q. In the top of the bulkhead?

A. That is right, sir.

Q. And elsewhere in the bulkhead?

A. Yes.

Q. Did you nail those battens over the other battens which were supposed to close the cracks?

A. Yes.

Q. So they would stand up?

A. They would stand up.

[fol. 330] Q. That is, stand out on the sides of the bulkhead?

A. It would stand out, sir.

Q. And you nailed your strips with nails, and the nails went through the battens into the bulkhead and into the battens that was there? How would you fasten the battens to the bulkhead—with nails?

A. How would I fasten the battens to the bulkhead?

Q. How would you fasten the battens to the bulkhead?

A. That was the idea, they had to be fastened by nails.

Q. On top of the battens?

A. Yes, nails would nail through to the wooden bulkhead.

Q. Your cargo separation covers which you have spoken of, were they on the cargo side of the bulkhead, or on the other side?

A. It was on the cargo side of the bulkhead on the fore part.

Q. These cargo separation covers, my friend here seems to be a little in a mist about it, apparently, although I am not, I think I remember it myself clearly, just what you said, but for his benefit I will ask you the question: The cargo separation cover as I understand you to say, was about the same size as a tarpaulin which you used to put over a hatch?

A. That is right, they were common sized tarpaulins.

Q. Common sized tarpaulin?

A. Yes.

Q. And you would require two or more of those covers to run from one side of the ship to the other?

A. I would require at least two.

Q. At least two?

A. Yes, sir, I would.

Q. You did not cut those covers in any way, did you?

A. No, sir.

Q. You fastened them in the way you have described?

A. Yes.

Q. With a batten across the top and a batten where the [fol. 331] two came together?